Bob Cooper's

JULY 15 2007

# SatFACTS

MONTHLY

Reporting on "The World" of satellite television in the Pacific and Asia

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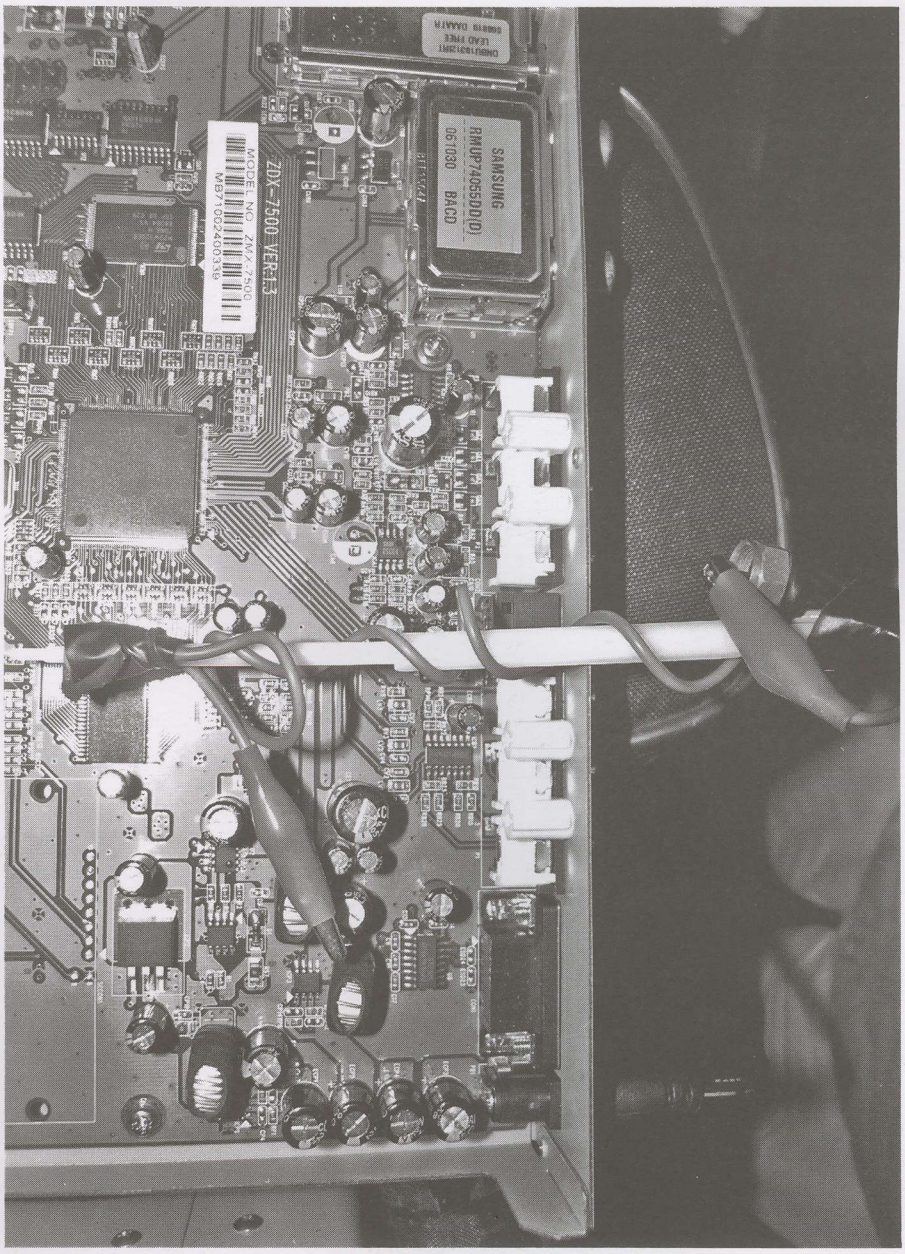
Vol. 13 ◆ No. 155
Price Per Copy:
NZ$10/A$11/US$/Euro8



freeview

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Freeview™ 8-day programming guide

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Front

Rear

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# SatFACTS MONTHLY

ISSN 1174-0779

**is published 12 times each year (on or about the 15th of each month) by Far North Cablevision, Ltd. This publication is dedicated to the premise that as we enter the 21st century, ancient 20th century notions concerning borders and boundaries no longer define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education. These messages are available to anyone willing to install appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.**

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http://www .apsattv.com
www.bobcooper.tv

Subscription Rates
Within NZ: $70 p/y
Australia: AV-COMM Pty Ltd.
PO Box 225, Brookvale,
N.S.W. 2100
61-2-9939-4377
Elsewhere: US$75p/y
All copies sent airmail post.




**Now year thirteen!**

## Who's on first?

**July 15, 2007**

Back in the 40s (that would be 1940s) an American comedy team, popular on the radio (later on TV when it came along) and in the movies made famous a sketch which would make no sense to anyone not familiar with the American version of Cricket known as "baseball." Just as 3-Stooge fans know by heart the dialogue that begins with utterance of "***Niagara Falls?***", Abbot and Costello's "***Who's on first?***" produces anticipatory gales of laughter.

*Who is on first* (?) in 2007 is the question of the day; just what has Freeview done, to date, to warrant more than negative press reporting?

First and foremost it made it to air; functional with two Freeview consortium approved STBs widely available. A review of the status of in mid-June, published in the NZ Herald, judged the Hills receiver to be "7 out of a possible 10" while competitor Zinwell rated 5 out of 10. The Herald's reporter did not like Hills plastic physical appearance, nor the slowness to make channel changes with what has been described as a "gaudy, plastic feel about it" remote. The Zinwell's "5" rating cited problems with loading TV3 and C4. The reporter then went to Zinwell distributor (Next Electronics) who responded by sending an email which new instructions. Unfortunately, after several tries no joy; TV3 and C4 still missing. Next also suggested, "If you still cannot receive the missing channels, after manual tuning, then your antenna dish and LNB most likely needs professional alignment by an accredited installer" when in fact the same antenna equipment was functioning just fine with the Hills receiver and SKY.

Unfortunately for Zinwell there would be other, more technical problems - the sort which "the accredited installers" would locate. Hills has chosen to provide a pair of SCART outputs (format selected through menu) and to not include an RF (modulated UHF) feature. Zinwell has elected to not provide SCART, using RCA sockets for component or composite connections. There is also a built-in UHF modulator which adds the Freeview reception as well as looping through OTA signals from a rooftop antenna. Both receivers have suggested retail pricing of $299, a price that concerned The Herald reporter in his review.

"(A price and functionality) *comparison with the PS2 comes in handy. This is a device with a DVD drive and computer processor, and far more sophisticated than the Hills and Zinwell receivers. Yet it looks much better and sells for $220. These receivers seem pricey for their basic functionality.*"

Zinwell initially delivered 8,000 Freeview receivers to New Zealand; the Hills quantity can but be estimated; 2,000 would be close. Unfortunately there have been technical problems with both "approved" models and even more unfortunate, when major media such as The Herald report on these problems this creates a negative image in consumer minds. Spokespersons for the consortium employed by TVNZ have adopted a head-in-the-sand refusal to comment on, or admit, technical problems. This backfired on Freeview's image - turning what was initially a minor problem into an opportunity for another group to flood Internet and the news media with a variety of complaints.

Which leads us to two critical areas. First is price; The Herald's reporter has found a major weakness in the TVNZ designed distribution program. $299 is significantly greater than the $100-$200 range originally suggested by government. The non-approved versions (essentially your typical FTA grade of STB) sold as "Freeview" are going to dealers for around $100 allowing consumers to access Freeview channels for under $200. Speaking for Freeview, saying what TVNZ should be saying but apparently believes ignoring a problem will cause it to go away; Zinwell. The second problem is the abysmal way that Freeview has totally failed to educate the consumers concerning the unique built-in software that even Sky cannot offer. This issue contains a piece authored at the request of SatFACTS by Zinwell (p. 21) that pretty much says what Freeview itself should be constantly saying to a country which to date has only heard about negative (primarily early days) problems. So - *who is on first?* The non-approved receivers, cheaper and essentially trouble free "Zapper" guys, are outselling the approved models.


**In Volume 13 ◆ Number 155**

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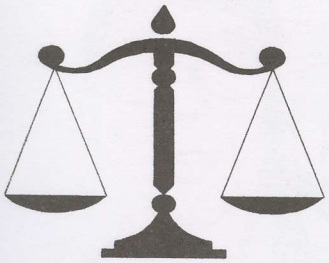
**Departments**

Programmer/Programming -p.2; Hardware/Equipment Update -p. 4; SatFACTS Digital Watch -p. 23; Supplemental Data -p. 26; With The Observers -p. 27

**-On the cover -- Identifying STB** internal noise sources (p. 20)



LETTERS

**Patriot 4.5m**

"As a fan of Coop for years dating back to the early 1980s and Coop's Satellite Digest, I know that someplace in my collection of Coop-writings from 1980 and onward there is an answer to my question. There is a 4.5m Patriot antenna in my yard, doing not much more than watching C1 and occasionally connecting my AVCOM Spectrum analyser. When adjusting the antenna for this satellite, I seem to have two separate, distinct peaks (antenna lobes) on the analyser - one is quite low in level, the other much higher. Can you explain what is happening here?"

Warren H, Australia

The dish SYSTEM has one (or perhaps two) sidelobes - meaning there is a main centre focal point where the signal reflected from the dish is captured by the feed antenna, and a secondary one that is mechanically off to the side (one or both sides) by a couple of degrees. It may not be a fault however as a 4.5m dish pointed at C1 for you would be an extreme example of overkill - a huge antenna for a strong signal. All dish systems have side lobes but normally they are from -14 to -20 dB lower in level than the main/centre lobe. Use the Spectrum Analyser on the 2 dB per division scale (not the 10) and measure the signal level at both the centre and the sidelobe. If the difference is less than 14 dB, there are two fixes possible (a sidelobe is actually subtracting gain from the centre/main lobe and therefore there is some loss in performance happening here). First, suspect the dish is not a "perfect parabola" which means someplace in the assembly one or more panels have been mis-aligned creating a subtle but measurable difference between the full reflector surface and the one (or two) wayward panel(s). Fix that and the sidelobe should improve or go away. If that is not the problem, perhaps the feed is not centred properly - slightly off of the centre position, or 'bent' slightly so it is pointing not at the dish centre but rather off to the side some number of compass degrees. *Again this caution* - C1 is very strong and a 4.5m is very large - even a properly aligned feed and assembled reflector will have some amount of apparent sidelobes under these conditions - but - the sidelobe should be available on "*both* sides" as you sweep through the centre focused signal.

# PROGRAMMER PROGRAMMING PROMOTION UPDATE

**JULY 15, 2007**

**'Australia Connected'?** A broadband plan capable of 12 Mbit/s delivery "to be available to 99% of Australia's population" has been announced. It will be known as 'OPEL' (OPtus + ELders - a rural finance group) and when completed plans 361 sites using something known as 'Y-MAX' technology; *wireless.* Each site hopes to cover a 20km radius (some press releases say 50km) but the question of where in the frequency spectrum this would best happen remains unknown. Logic says that one attains 20 (heaven forbid 50) km coverage to simplistic laptop antennas only at VHF or UHF - not certainly above 1 gig. We investigate (p. 14 here).

**New As2 Indian MCPC**. IndiaSign Pvt Ltd. has signed a contract for a full C-band transponder to provide multiple channels of Indian source programming over the extensive As2 coverage region. The release includes this sentence: "...will provide uplink and distribution services to Indian broadcasters" suggesting this may be an all CA (non-home viewing) package. Start date, transponder not announced.

**15 months in USA jail**. Hew Griffiths spent 3 years in an Australia jail battling to stop his extradition to the US for a trial accusing him of being the brains behind the 'DrinkOrDie' counterfeit software ring, operated out of his home in Berkeley Vale, Queensland. US authorities finally overcame Australian attempts to stop his extradition and after a trial there he has been sentenced to a US penitentiary. He admitted being responsible for software allowing non-authorised copying of films, software programs, video games and music. This was the first time that an Australian has been extradited to a US court, for alleged violations of copyright, the result of Australia adopting US copyright laws.

**Freeview updates.** Videophiles are agog over the significant improvement in image quality using a recently available 1080P design 50" range receiver fed with a little know Hyundai STB. Reports indicate Samsung has sold as many as 40,000 receivers (not all 50" of course) in recent months. TV3's Freeview image is being broadcast at 6 Mbit/s and image quality on larger screens (40" and up) while TVOne (and 2) are staying with 4 Mbit/s data rate. Bonner Martin reports the image quality on a big screen "is very much apparent." TVNZ believes they will launch "TV6" on satellite "during September" - programming will start day with children's shows, afternoon to early evening for teenagers switching to adult for balance of day.

**TVNZ Sports Extra** (Freeview channel 20) will continue to add live and delayed coverage including the FIFA Under 20 World Cup (early July), AFC Asian Cup (starts July 21); details snd schedule updating tvnz.co.nz f ollowing keyword football. For hearing impaired, the Zinwell Freeview STB allows the unique ability to watch and record for delayed viewing captions on programming. 11% (380,000) are hearing impaired.

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**BBC FTA?**

"I have been trying to capitalise on the broad publicity for Freeview which translates to a consumer marketplace that at least now knows they have options other than Sky. To that end, I have done extensive research to build a list of FTA English speaking services via satellite. Recently I did a news story for a small North Island newspaper including a photo with a Ku-band dish. In the quotes attributed to me, the reporter listed some of the channels available and included 'BBC World'. This is, of course, only on C-band but dishes as small as 2.1m can do the job. Imagine my surprise to receive a telephone call from the BBC regional office in Sydney advising, '*We are a service only on offer to major telecasters, such as TVNZ or Sky*'. Followed by a threat of legal action if I persisted in promoting or installing systems to receive the BBC. I was aghast at their heavy handed and threatening attitude. What is the story here?"

Chris, New Zealand

Confused. FTA services are available to anyone with a private, non-commercial interest in receiving them. But there are copyright restrictions on commercial use (NZ Copyright Act 1994) - a system installed at a pub or for distribution within a motel for example. A school, on the other hand, would be OK. But - and it is important here - a FTA service to claim such copyright-protected service must advise viewers of the limitations. Normally this is done through over-the-air announcements ("*Reception of this service without written permission ...*") but in your case, a telephone call probably would satisfy the copyright regulations. Sky Start Up includes BBC World ($47.73 per month). Other private options include C-band Intelsat 8 and Intelsat 2 of which Intelsat 2 (169E) is the better NZ choice although a dish of 2.4/2.8m size will probably be required. See report (p. 7) this issue for a summary of English speaking FTA services on both C and Ku.

**Taking Responsibility**

"Even after it was common knowledge an approved receiver for Freeview had major noise problems (I have installed 12 and all had defective modulator output), the local DSE retail shop selling it refuses to take responsibility and continues to sell units that are obviously defective. I tried to explain to Next Electronics how frustrating this is to installers and customers who are left to get permission to do an exchange. They were not the least helpful; not good."

David

# HARDWARE EQUIPMENT PARTS UPDATE

**JULY 15, 2007**

**Freeview hardware update.** Hills IRD reliability remains good according to installers but the only way to get teletext out of it is to use the component output; a design oversight. Users are using composite output for normal TV viewing but must switch to component format position for text. One design problem (other than teletext only via component) involves the receiver locking up when the remote control buttons are entered too rapidly. A Hyundai receiver available through one distributor per island (North, South) is imported by hyundai@nzljohn.co.nz. Dealers report it to be a top performer unit. IRD pricing? The Hyundai consumer lists for $299, dealer cost in 5 lot is $150 while the Hills (also $299 consumer list) typically goes to dealers at $201. A 'buying group' has formed where 5 lot pricing drops to $181 per IRD. For analysis of "UHF modulator noise" problems, see p. 20 here.

**SKY TV owned Prime** may have an "interim solution" to not being available through Freeview; for $145 it appears (no verification from SKY) they will install a dish, LNBf and provide a receiver that will access TVOne, TV2, TV3, C4, Maori and missing from Freeview Prime. And no monthly fees. Offer, if valid, appears to be limited to isolated geographic regions (example: north of Whangarei) where Prime's terrestrial service is not available. Previously, for a $200 install fee and around $18 a month these channels were available. Prime plans to be the first to offer HD service (on selected channels) but TV3 will be close behind.

**New Chinese satellite.** Chinasat 6B launched July 7 to 115.5E claims to have 38 C-band transponders on board (that woks out to 19 on each polarity, 40 MHz wide, between 3.4 and 4.2 GHz) and coverage that extends as far east as New Zealand. The new satellite should be on station and testing by late July if the transfer phase functions properly.

**Another 24/7 news** channel. Iran's Press TV, English language, is a no holds barred anti-US service designed to appeal to Muslim viewers. Iran's head of television makes no bones about their mission: "The goal is to counter propaganda peddled by western channels." Where? In Australia, B3 12.564H (30.000, 2/3). Asia and Pacific, Asiasat 2, 3660V (27.500, 3/4).

**Palapa D2 to replace C2** at 113E has a significantly larger planned footprint for (most of) Australia (38 dBw peak) and New Zealand (37 dBw). Launch date not yet announced.

**Britain's version** of terrestrial Freeview has hit 8.4 million homes, up 673,000 in the first 3 months of 2007. For the first time, British Sky TV has fallen into second place by 400,000 homes. B-Sky-B gained 32,020 in the same 3 months,, actually behind cable provider Virgin Media (36,100 new homes).

**Pat on our back.** Next month completes 13 years of SatFACTS publication; SatFACTS Anthology will include all issues (#1 - #156) after August is printed (see order form, p. 32).

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$180 each
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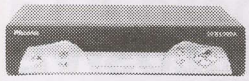

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Quantity price available

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LNBF $24/each
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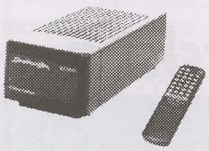
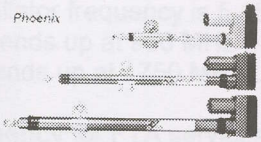


SuperJack EZ2000
Positioner $50/each

Moteck V Box II
DiSEqC1.2 Positioner
$65/each



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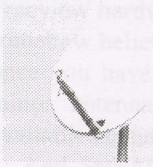

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| | | | |
|---|---|---|---|
| Caravan Digital Ant | $80 | Star C Band LNBF | $18 |
| 1.7m Facia Mount | $15 | Zinwell C band LNBF | $28 |
| 65cm KU offset dish | $22 | PBI C+Ku band LNBF **Top Seller** | $65 |
| 110cm Triax offset dish**Clear Out** | $100 | MTI C band LNBF | $18 |
| 90cm Offset dish **Hot Price** | $35 | MTI one cable solution C Band LNBF | $45 |
| One leg gutter mount | $18 | Satellite finder | $20 |
| Two leg gutter mount | $22 | RG6 striper | $15 |
| Tin roof mount | $22 | RG6/RG11 crimper | $20 |
| Wall mount | $15 | Angle meter | $35 |
| Superjack H-H motor | $95 | Compass High Quality | $10 |
| 2.3m SD mesh dish | $130 | RG 6 Crimp Connector 100 pack | $25 |
| 3m SD mesh dish | $340 | 22K switch | $10 |
| 3m HD mesh dish | $380 | Two way DiSEqC switch | $10 |
| 3" 2.5m galvanised pole | $33 | Four way DiSEqC switch | $12 |
| 3" 3m galvanised pole | $38 | Satellite 2 way splitter | $1.50 |
| 3" 3.5m galvanised pole | $43 | Satellite 3 way splitter | $2 |
| 3" Triangle Pole for C band dish | $50 | Digiair Terrestrial hand held meter | $360 |
| Speaker Stand for caravan use Ku dish | $40 | Star LED Easy to use Satellite Meter | $85 |

## This Months Specials

**Phoenix JT-3300C**
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**Satellite Twin Tuner HDD**
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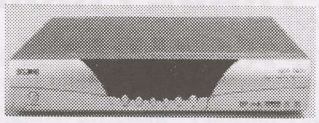

**Coship 5110D**
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**No problems activating cards**
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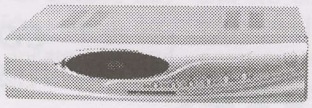

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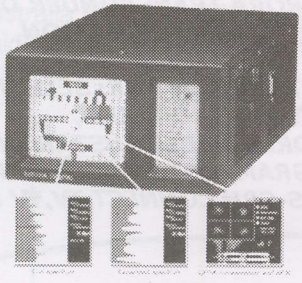
• Satellite identification.
• Symbol rate 1-30 Msymb/s.
• RS 232 for PC connection
• Built in, rechargeable battery.
• Only 4 kg complete with carrying-case.



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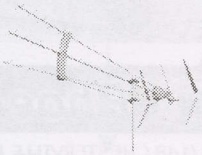

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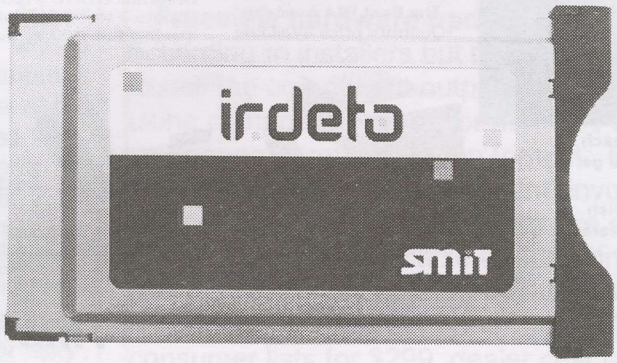


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## SatFACTS (July 2007) Summary: FTA English (+) C and Ku services

| Where? | Sat | Freq.. | Service | Symbol | FEC | VPID | APID | Aust? | NewZea? |
|---|---|---|---|---|---|---|---|---|---|
| **177W** | NSS5 | | BYU-TV | 6(527) | 1/2 | 4,377 | 4385+ | yes | yes |
| **180E** | I701 | 3854R | NASA | 2(000) | 3/4 | 308 | 256 | yes | yes |
| | | 3892R | TBN USA | 11(394) | 2/3 | 3,601 | 3,604 | yes | yes |
| | | | JCTV | | | 34 | 36 | yes | yes |
| | | | Church Ch | | | 49 | 52 | yes | yes |
| | | | SmileChld | | | 65 | 68 | yes | yes |
| | | 4174L | AFRTS | 3(680) | 1/2 | (radio) | 1,320 | yes | yes |
| | | 12648H | EWTN | 28(066) | 3/4 | 517 | 645 | yes | no |
| **169E** | I2 | 3900H | AustNet | 30(000) | 7/8 | 1,160 | 1,120 | yes | yes |
| | | | BBC Wrld | | | 1,360 | 1,320 | yes | yes |
| | | | Radio Aus | | | (radio) | 1,122 | yes | yes |
| | | | Bloombrg | | | (radio) | 1,622 | yes | yes |
| | | 4022H | HopeChnl | 5(900) | 2/3 | 1,160 | 1,120 | yes | yes |
| **166E** | I8 | 3780H | CNN rad. | 25(000) | 3/4 | (radio) | 4,120 | yes | yes |
| | | 3829H | AustNet | 13(238) | 3/4 | 2,307 | 2,308 | yes | yes |
| | | | RadioAus | | | (radio) | 2,312 | yes | yes |
| | | 3940H | BBC Japn | 27(690) | 7/8 | 2,160 | 2,120 | yes | yes |
| | | | EWTNAs. | | | 2,560 | 2,520 | yes | yes |
| | | | EWTNrad | | | (radio) | 2,522 | yes | yes |
| | | 4020H | ESPN | 26(470) | 3/4 | (radio) | 1,220 | yes | yes |
| | | | | | | (audio) | 1,320 | yes | yes |
| | | | | | | (audio) | 1,420 | yes | yes |
| | | | | | | (audio) | 1,520 | yes | yes |
| | | | | | | (audio) | 1,620 | yes | yes |
| | | 4060H | NHK | 16(180) | 1/2 | 1360/pal | 1322E | yes | yes |
| | | 4120V | GEM-TV | 5(554) | 1/2 | 257 | 258 | yes | no |
| | | 12,502 | MacTV | 3(074) | 3/4 | 1,660 | 1,620 | no | yes |
| 160E | D1H | 12,456 | TV3 | 22(500) | 3/4 | 612 | 650 | no | yes |
| | | | C4 | | | 513 | 651 | no | yes |
| | | | NatRadio | | | (radio) | 659 | no | yes |
| | | | Concert | | | (radio) | 660 | no | yes |
| | | 12,483 | TVNZpro | 22(500) | 3/4 | 512 | 650 | no | yes |
| | | | MaoriTV | | | 514 | 652 | no | yes |
| | | | TVOne | | | 515 | 653 | no | yes |
| | | | TV2 | | | 516 | 654 | no | yes |
| | | | SportExtra | | | 520 | 658 | no | yes |
| | | 12,519 | NatRadio | | | (radio) | 1,151 | no | yes |
| | | | Concert | | | (radio) | 1,152 | no | yes |
| | | | Niu FM | | | (radio) | 1,153 | no | yes |
| | | | Tahu FM | | | (radio) | 1,159 | no | yes |
| | D1V | 12,519 | NatRadio | | | (radio) | 1,151 | no | yes |
| | | | Concert | | | (radio) | 1,152 | no | yes |
| | | | Niu FM | | | (radio) | 1,153 | no | yes |

skybridge

Skybridge (Australia) a merger of Ursys and GM Communications www.skybridge.com.au

## Installers wanted for satellite broadband connections

The Australian Government's Australian Broadband Guarantee Subsidy has provided for unprecedented activity in the two way satellite installation industry. Skybridge is a major provider of installation services for ISP's in Australia and we are seeking contract installers to help us with the increased demand Australia wide.

ipstar Broadband Satellite

This is a great opportunity to compliment your existing business with the provision of installation services of this exciting new technology. If you have experience in installing receive only satellite systems, Skybridge will provide all of the necessary training documentation and technical support you will require to be proficient in installing IPSTAR satellite broadband.

If you would like to be involved please register your interest @ installers@skybridge.com.au


| 160E | D1V | Freq | Service | Symbol | FEC | VPID | APID | Aust? | NewZea |
|---|---|---|---|---|---|---|---|---|---|
| | | 12,519 | Tahu FM | 22(500) | 3/4 | (radio) | 1,159 | no | yes |
| | | 12,564 | Calvary | 22(500) | 3/4 | (radio) | 1,154 | no | yes |
| | | 12,581 | Kiwi | 22(500) | 3/4 | (radio) | 1,160 | no | yes |
| | | 12,608 | MaoriTV | 22(500) | 3/4 | 1,005 | 1,105 | no | yes |
| | | 12,671 | TVOne | 22(500) | 3/4 | 1,004 | 1,104 | no | yes |
| | | | TV2 | | | 1,005 | 1,105 | no | yes |
| 156E | C1H | 12,305H | Expo | 30(000) | 3/4 | 1,031 | 1,032 | yes | no |
| | | 12,367V | AlJazeer | 27(800) | 3/4 | 1,121 | 1,122 | yes | no |
| | | 12,407V | OptTune | 30(000) | 2/3 | 80 | 81 | yes | yes |
| | | 12,438H | FoxDigit. | 27(800) | 3/4 | 1,051 | 1,052 | yes | no |
| | | 12,478H | TVSN | 27(800) | 3/4 | 1,081 | 1,082 | yes | no |
| | | 12,527V | Indig.TV | 30(000) | 3/4 | 1,021 | 1,041 | yes | no |
| | | | Arrow | | | (radio) | 1,062 | yes | no |
| 152E | B3 | 12.407V | Aur.Tune | 30(000) | 2/3 | 48 | 49 | yes | yes |
| | | | Sport927 | | | (radio) | 256 | yes | yes |
| | | 12,425H | UBI info | 22(500) | 3/4 | 524 | 652 | yes | no |
| | | 12,452H | Italian | | | 524 | 652 | yes | no |
| | | 12,525V | EWTN | 30(000) | 2/3 | 1,960 | 1,920 | yes | yes |
| | | | Hope Ch | | | 2,161 | 2,162 | yes | yes |
| | | | OmanTV | (Arabic) | | 2,260 | 2,220 | yes | yes |
| | | | Deepam | (Tamil) | | 2,360 | 2,320 | yes | yes |
| | | | TVR Int. | (R'mani) | | 2,365 | 2,325 | yes | yes |
| | | | AbuDhab | (Arabic) | | 2,460 | 2,420 | yes | yes |
| | | | Russia | English | | 2,560 | 2,520 | yes | yes |
| | | | Dhama | (Thai) | | 1,360 | 1,320 | yes | yes |
| | | | ERT | (Greek) | | 1,860 | 1,820 | yes | yes |
| | | | ThaiTV | (Thai) | | 1,460 | 1,420 | yes | yes |
| | | | 3ABN | English | | 2,160 | 2,120 | yes | yes |
| | | | DunaTV | Hungary | | 2,665 | 2,625 | yes | yes |
| | | | KISS FM | | | (radio) | 2,094 | yes | yes |
| | | | UCB Au | | | (radio) | 2,321 | yes | yes |
| | | | 3ABN | | | (radio) | 2,121 | yes | yes |
| | | 12,504H | PressTV | 22(500) | 2/3 | 1,960 | 1,920 | yes | no |
| | | 12,658V | Church | 30(000) | 2/3 | 504 | 507 | yes | yes |
| | | | Inspire | | | 505 | 580 | yes | yes |
| | | | Daystar | | | 1,061 | 1,024 | yes | yes |
| | | | TRT | Turkey | | 1,860 | 1,820 | yes | yes |
| | | | TBN | | | 1,660 | 1,620 | yes | yes |
| | | | JCTV | | | 1,801 | 1,824 | yes | yes |
| | | | GodTV | | | 501 | 540 | yes | yes |
| | | | SmileChl | | | 502 | 550 | yes | yes |
| | | | BVN | (Dutch) | | 503 | 560 | yes | yes |
| | | | OverCo | | | (radio) | 1,123 | yes | yes |
| | | | RNW2 | (Dutch) | | (radio) | 542 | yes | yes |

| Where | Sat | Freq. | Service | Symbol | FEC | VPID | APID | Aust? | NewZe |
|---|---|---|---|---|---|---|---|---|---|
| **122E** | As4 | 3820V | CCTV9 | 27(500) | 3/4 | 1,260 | 1,220 | yes | yes |
| **105.5** | As3S | 3706H | NewsAs | 6(000) | 1/2 | 1,160 | 1120E | yes | yes |
| | | 3760H | Bloombg | 26(000) | 7/8 | 1,020 | 1,021 | yes | yes |
| | | | AlJazeer | | | 1,090 | 1091E | yes | yes |
| | | | DwGerm | | | 1,300 | 1301E | yes | yes |
| | | | Bloombg | | | (radio) | 1022E | yes | yes |
| | | | DWrad2 | | | (radio) | 1321E | yes | yes |
| | | 3960H | CNNrad | 27(500) | 3/4 | (radio) | 1,122 | yes | yes |
| | | 4132H | CCTV9 | 9(375) | 3/4 | 1,260 | 1,220 | yes | yes |
| | | | CCTVE | | | (radio) | 1,360 | yes | yes |
| **100.5** | As2 | 3660V | JameJam | 27(500) | 3/4 | 2,695 | 2,691 | yes | yes |
| | | 3820V | Saudi#2 | | | 3,011 | 3,012 | yes | yes |
| | | 3880H | VOAasia | 20(400) | 1/2 | 7,160 | 7,120 | yes | yes |
| | | | VOAusa | | | 7,460 | 7,420 | yes | yes |
| | | | Music | | | (radio) | 7,220 | yes | yes |
| | | 4000H | WRN | 28(125) | 3/4 | (radio) | 2,311 | yes | yes |
| | | | Canada | | | (radio) | 2,313 | yes | yes |

Note: Sources for dish hardware including actuators and Moteck include Phoenix (p. 5), AvComm (p. 13), Strong (p. 16), Kristal (p. 18), DMS International (p. 13) Melbourne (p. 22), SatWorld (p. 23). Dish movers require either a stand-alone dish controller or software (+ receiver connections) to function. Investigate before buying to ensure compatibility with your equipment.

## The 134E ApStar 6 Enigma

This satellite, new in 2006, produces a strong C-band signal over Australia, New Zealand and the western Pacific; some report quality reception on dishes as small as 1.8m. At press-time there is no scheduled English language service here but the density of Chinese (both Mandarin and Cantonese) services is significant and for those who speak the language(s) this is a very popular satellite. There is even old fashioned analogue services (CCTV1-3860V, audio 6.8; CETV-3980V, audio 6.6; Zhejiang Satellite TV-4020V, audio 6.6 + radio 6.05; Shandong TV-4100V, audio 6.6) for those who want to see if these dust collecting devices still function!

*The majority of services are FTA, as follows:*

3420V, 3460V: Top V (CA, 27.500, 7/8, Mediaguard)
3540V: China Weather TV (FTA 1 TV + CA, 27.500, 7/8 - FTA VPID 3210, APID 3211)
3740V: CCTV (FTA 4 channels, 20.330, 3/4)
3758H: Nei Monggol TV (FTA 2 TV + 4 radio, 8.400, 3/4)
3808V: Shanghai Media Gropup/SMG (FTA 2 TV 3 radio, 8,800, 3/4)
3836V: Shanghai Educational TV (FTA 1 TV, 1 radio, 3.292, 3/4)
3840V: CCTV (FTA 7TV, 27.500, 3/4)
**3860V**: CCTV1 (**FTA analogue**, audio 6.6)
3868H: Qinghai Mux (FTA 2 TV, 5 radio, 8.680,3/4)
3886V: NingXia TV (FTA 1TV, 2 radio, 4.800, 1/2)
3893V: Gansu TV (FTA 1TV, 5 radio, 4.800, 1/2)
3900V: Travel Channel (FTA 1TV, 1 radio, 4.800, 1/2)
3907H: Yunnan TV (FTA 1 TV, 5 radio, 6.980, 1/2)
3914V: Chongqing TV (FTA 1TV, 4 radio, 4.800, 1/2)
3920H: Guizhon TV (FTA 1TV, 3 radio, 6.930, 1/2)
**3980V**: CETV-1 (**FTA analogue**, audio 6.6)
**4020V**: Zhejiang Satellite TV (**FTA analogue**, audio 6.6)
4045H: Guandong Satellite TV (FTA 3 TV, 13 radio, 17.778, 3/4)
4050V: Zhejiang Satellite TV (FTA 1TV, 8 radio, 7.820, 2/3)
4058V: Golden Eagle Cartoons (FTA 1TV, 4.420, 3/4)
**4100V**: Shandong TV (**FTA analogue**, audio 6.6)
4120H: XinJiang TV (FTA 3TV, Cryptoworks 3 TV, 7 radio, 27.500, 3/4)
4160H: CCTV (FTA 1TV, Irdeto 5TV, 27.500, 3/4)

For Chinese residents throughout the South Pacific there are 37 FTA digital here + 4 analogue FTA.

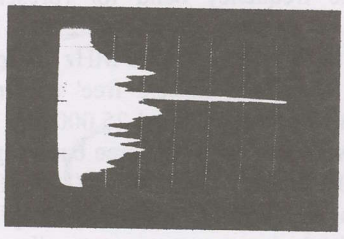
## Av-Comm Pty Ltd

### Satellite Television Equipment Specialists

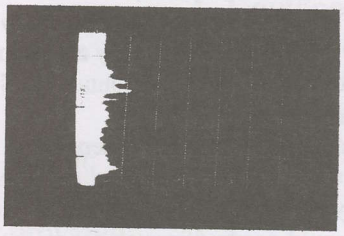
Ph - 02 9939 4377 Fax - 02 9939 4376
Website – http://www.avcomm.com.au
Email – cgarry@avcomm.com.au

Since late 2004 broadband interference in the C-band satellite spectrum has been ever present in the Sydney metropolitan area wiping out an estimated 10,000 C-band viewers as well as many commercial sites. This interference caused by Unwired Australia has now spread to Melbourne. To fight this interference, Av-Comm has designed a range of products to allow customers to continue using C-band systems.

- IF Filter 950-1450Mhz
- Dual Polarity 3.7 – 4.2Ghz LNB with 3.5Ghz Notch Filter
- Single Polarity PLL 3.7 – 4.2Ghz with 3.5Ghz Notch Filter
- Waveguide Filter 3.7 – 4.2Ghz



Spectrum Showing Unwired



Spectrum After Filtering

As each site that suffers interference is different, there is no one fix for all affected sites but over the past two years we have developed many combinations to give you the best chance of beating this problem. Our commercial solutions have a 100% success rate. If you are experiencing problems caused by interference feel free to call us and we will help find the best solution for you.

Understanding this frequency business

# Australia Connected?
# The threat to satellite reception


Summary: The Challenge of being connected

**C-band satellite** interference or total loss of C-band reception.

**Coverage of proposed** 3.4 & 5.8 GHz: *claiming* coverage to 20 or 50km from base units.

**Return linking range** unlikely to exceed 5km with existing WiFi PC technology.

**5.8 GHz ('band 2')** has automatic 'distance penalty' by being at twice the frequency of existing 2.3GHz systems.

**5.8 GHz** is an 'unlicensed' band growing at a rapid rate with newly available wireless phones and short-range home WiFi - destined to evolve into the same (degraded) situation as one presently finds on 2.3 GHz.

**For many locations**, outdoor antennas will be required, a technical challenge for users of both 3.4 and 5.8, presently lacking suitable (hard-line) coaxial cable and connectors.

**A critical shortage** of skilled installers - a new business opportunities for satellite TV installers.


Virtually all developed countries are now heavily into modernising their respective telephone networks to upscale to what is usually called 'broadband'. In most countries, individual telephone firms are privately owned and the best levels of service are found initially where the greatest concentration of housing or business customers exist. But once the population thins out to fewer than 5 customers per kilometre of telephone plant, the cost of growing into broadband falls below the projected revenue stream - it costs more to expand the capacity of the system than the telephone firm projects it will earn back in a set period of time - say 5 years.

This creates for rural area dwellers a dilemma - they are stuck with 'dial-up' Internet connection speeds or (where available) a high cost satellite connection. Enter government, whether at the local, regional/province, state or national level. 'Dial-up' greatly restricts incoming (down load) and outgoing (upload) data flows, and for complex and sizeable data streams essentially eliminates such customers from being participants in the '*digital, Internet revolution*'. In a sense, those unable to access broadband become 'second-class citizens' unable to use services such as web-banking, video downloading or low cost telephone (such as Skype).

Telephone plants are hardware governed; if a home or business is too many kilometres from the broadband capable 'local (telephone) exchange', the 30-80 year old copper wire system simply cannot support higher data speeds. Virtually every telephone firm in the world is investing in extending the reach of exchange-connection but as the population thins out, a line is drawn beyond which no further modernising will be done.

There is an alternative; *radio waves*. All modern computers can be equipped with something called WiFi which is a wireless transmitter not unlike a cell phone site covering a radius of several hundred metres (low-cost 'home' WiFi) to a few kilometres. The PC (whether fixed or laptop) has a physically small antenna and the ability to receive the area coverage of a WiFi transmitter - as well as a low power (10/50/100 milliwatt) 'sender' (transmitter). Think of a cell phone built into the PC capable of connecting with / talking to the WiFi system. The WiFi sites, whether in a home or covering a larger area, are in turn 'networked' to a broadband with 'hardwire' or microwave links - they are simply plugged in and each site provides a two-way connection just as a cell phone site functions.

Radio waves have an operating frequency and this becomes the first challenge for the WiFi system designer wishing go cover an area say 10 or fewer kilometres in radius. Ideally, such WiFi sites would occupy frequencies in the VHF or low UHF spectrum (50-900 megahertz). For the moment, much of this range of frequencies is already occupied by television (and FM radio) broadcasters and are therefore not available. There is a rule of thumb in all VHF frequencies above 50 MHz: the higher the frequency, the shorter the coverage range. Just as an example, a TV station operating at 50 MHz uses a transmitter power of up to 100,000 watts to provide reliable service out to distances as great as 100km. For a TV station using 800 MHz to achieve the same level of coverage requires transmitter power levels in the region of 5,000,000 watts.

As the frequency increases past 900 MHz, the distances covered become shorter and shorter and by 2,000 MHz a suitable transmitter desiring to reach 100km will be in the region of 20,000,000 watts. You would not want to pay the operating electricity bill (nor the original capital cost) for such a monster!

The majority of all (area coverage) WiFi systems currently functional use power levels under 100 watts so it is logical that distances covered are much smaller - 10km being quite exceptional. The frequency band for (present) home and commercial WiFi systems is around 2,300 MHz for one reason: in all of the spectrum from 0 MHz up to at least 3,400 MHz, this was the only 'license free' spectrum available. Therefore, in the world's estimated 25,000,000 WiFi systems, they are all crowded into a license free band together. Still, at the typical 10/50/100 milliwatt (100 is 1/10th of a watt) power level found in home systems, with adequate planning and an elevated transmit/receive antenna system, distances to 0.5km are often possible.

Grey market power amplifiers boosting the power to commercial levels as high as ten watts are available but using such levels (which are contrary to regulations) overlooks that WiFi is a two-way system. There is the 'base station' transmitter (connected through a PC to the broadband

telephone line) and there is the additional (fixed location or portable laptop) PC(s). Boosting the power of the base may make the WiFi reach further to a PC but at the distant PC its transmission power remains at the 10/50/100 milliwatt level. This creates an 'alligator system' - big on outgoing power but still dependent upon being able to 'hear' the response(s) from the standard power PCs using the system. Being able to 'receive' the base unit over greater distance is quite useless if the base cannot hear your responses. And as an aside, an 'alligator' base station will now travel far enough to create reception interference to other systems kilometres away. Yes, it is possible to add a power amplifier to a more distant PC so it can be heard back at the base station but this is an expensive and power consuming add-on and few users can handle the technical challenges involved.

Australia Connected

To go where broadband 'hardwire' has not gone (and is not planned to go) a new initiative combining the financial powers of Optus and Elders (a rural finance group) in a firm known as OP(tus)EL(ders) plans to install 361 wireless sites throughout portions of Australia. OPEL will use a software + hardware technology called 'Y-Max', basically like existing WiFi but with improved software to (it is claimed) provide some improvement in allowing low power (10/50/100 milliwatt) PC transmitters to be 'heard' over a greater distance. How much greater? Well, it comes down to "*whom do you believe*" as some Australian government offices are suggesting 50km while OPEL is suggesting 20km. It turns out that virtually all of the proposed 361 Y-MAX sites planned with co-share physical locations and towers with pre-existing cell phone sites.

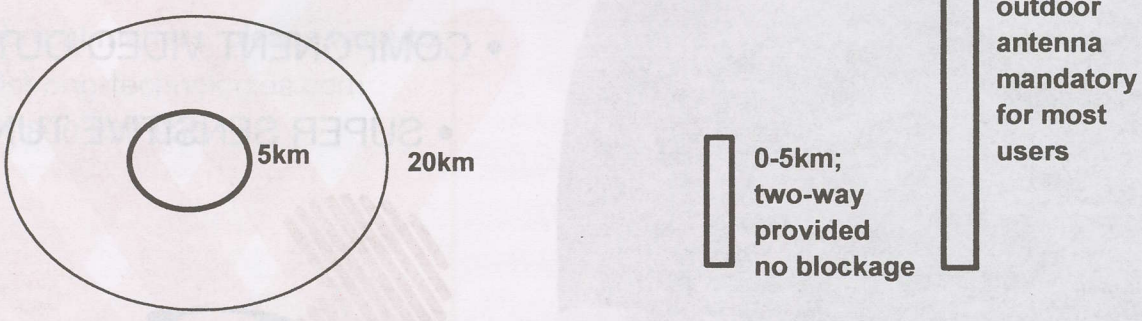
And the frequency?. Unfortunately, the first 'band' will be in the C-band television region of 3.4 to 3.7 gigahertz. Yes, established SatFACTS readers are already aware that in Sydney and other CBD areas is currently using the same C-band region for their older version of WiFi (claiming more than 25,000 subscribers); SatFACTS #121. Y-MAX is a fill in service - creating access to broadband Internet where none presently exists. However, in some areas (Hobart, Launceston in Tasmania), it will be the *only* broadband connection. And there is to be a second band as well - 5.8 GHz. This is in recognition that insufficient spectrum exists between 3.4 and 3.7 for present and new users and 5.8 GHz is the next-up-available spectrum offering growth room. OPEL is pretty hyped on what they expect from Y-MAX - claiming 12 Mbit/s throughput. Most existing hardwire broadband (telephone) connections do well to manage 1/24th this data flow (500 Kbit/s). There is possibly a fair amount of 'hype' within the early claims and announcements.

So what is wrong here?

The most obvious is the greatly enlarged geographic areas which will have varying powerful interference located in the 3.4 to 3.7 GHz band. Technically, this is a world-wide recognised portion of the 3.4 to 4.2 GHz band established for earth to ground (and V-SAT ground to satellite) transmissions. Historically, the original band was 3.7 to 4.2 GHz and it was expanded by 300 MHz (3.400 - 3.700 GHz). The new expanded region is widely used in the Pacific region (Australia). Australia allowed UnWired into this band (SatFACTS # 121, p. 15) and the first broadband transmissions launched in Sydney. Complaints and objections to the authorities fell on deaf ears - basically, although Australia is a signatory to the ITU international agreements governing frequency assignments, it has chosen to ignore that pledge.

In an nutshell, a transmitter operating between 3.4 and 3.7 not only directly conflicts with operating satellites, it has a more devastating impact on C-band reception systems located within 10-20km of a transmitter. Compared to the very weak signal level from 3.4 - 4.2 GHz satellites, the 'local' transmitter is an 'alligator'. The strong local signal,. even from 20km away, simply overpowers the typical 50 dB gain LNB(f) creating either interference or within a few km of the transmitter, simply shutting it down. Adding 361 new sites to those already existing will make C-band reception very difficult not just in CBDs (where the present transmitters exist) but into rural areas as well - where new transmitters will be sited. Is there a solution? Very careful selection of a high-gain LNB(f) will help and a filter (see Avcomm Pty Ltd. advertisement on p. 13 here) will clean up perhaps 70% of the sites 4km or more distant from a 3.4-3.7. Closer in to the transmitter? Good luck!

The second most serious mistake is for politicians and the engineering community to promise that each (or any!) of the sites will serve a radius of 20 km (one government official is widely quoted claiming 50km range per site). Yes, each site could be hugely powerful (a very expensive technology to employ today) and actually reach out 50km. But this is a two-way system and the transmitter site must also be a receiver. And given the current state of PC and laptop 'WiFi' technology, such claims are politically motivated. There is a sidecar to that concern. If 361 sites are planned and each one




**5km coverage circle for well located 3.4 GHz transmitter; beyond the coverage 'cut-off' point, where the lower power level PC can no longer 'reach' the local site receiver. But higher power site is forecast to reach 20km. From 5 to 20km region, their answer is "an outdoor antenna."**

RECEIVERS

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POSITIONERS

ACTUATORS

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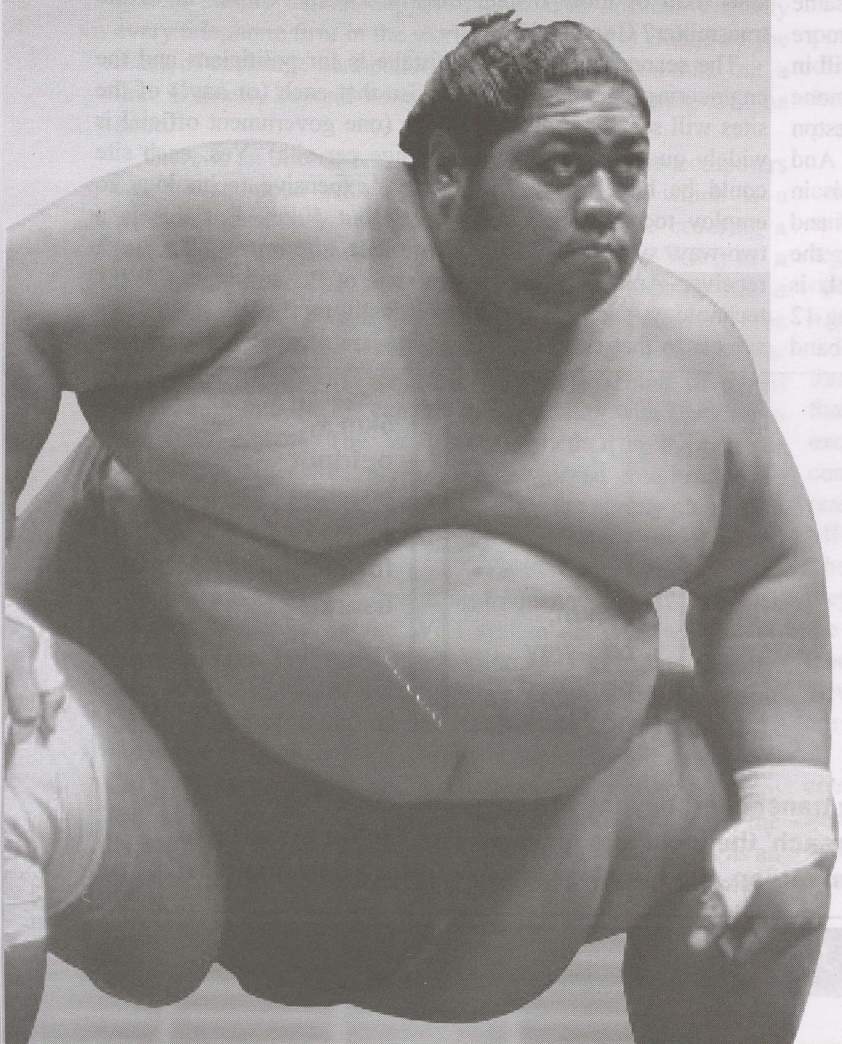
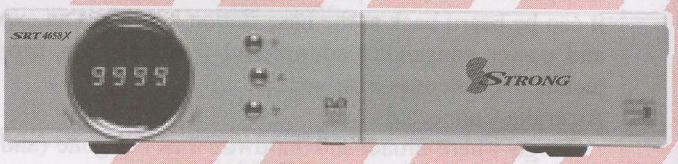


# Robust Digit
# Receiving
# For Aus

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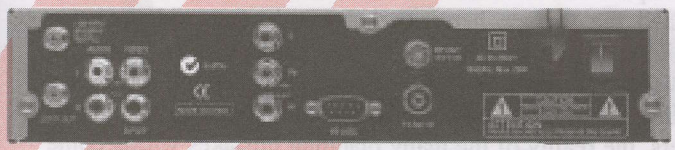

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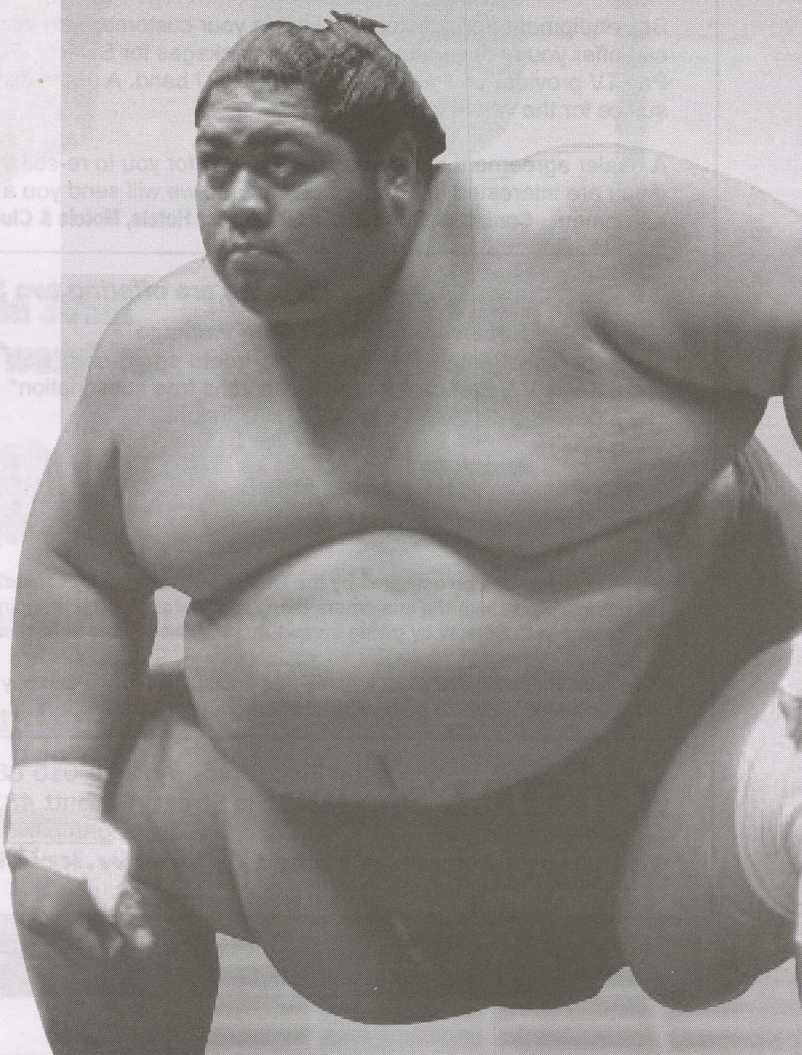


NG

not just by name

assumes a 20km reach, and two-way dialogue coverage region, when in reality 5km is more realistic, what happens next? People who anticipate using the system (those between 5 and 20km away) will be disappointed. Think of terrestrial Freeview TV experience in the UK - sites were created on paper, built, and then too late it was clear that for every 'permanent' TV MUX site originally planned, between 3 and 4 'booster sits' will now be required to fill in the holes in coverage. Said another way? 361 sites could easily turn into 1,000 sites assuming the system works well enough to create a demand.

The quick answer to this problem now being floated is, "*Some locations will require an outdoor antenna for coverage.*" That claim may get OPEL off the hook with those who are already suggesting the plan is flawed at concept, but the numbers here at simply incorrect. One example: If the base transmitter operates at 12.8 watts of power and the laptop or PC is transmitting with 100 milliwatts, there is a 21 dB difference between the two. That will gain the 'system link' around 50km coverage when compared to a 5km original maximum length using a built-in WiFi antenna at the PC. And that translates to having a 1 metre size range dish at each home past the 5km example cut-off point using a built-in antenna. That sounds promising but there is more. Say the installation requires 20 metres of coaxial cable between the outdoor 21 dB gain antenna and the PC. Cable? The RG6 family of cable simply does not function at 3.4 GHz and at 5.8 GHz (the second band planned) even 2 metres of cable will quickly turn the 21 dB gain antenna system into under 3 dB gain. Cable that will deliver even half power from the PC to the outdoor antenna simply does not exist today and when it is created for this purpose, a hard-line family of cable which is going to be mandatory, is likely to cost in the range of $2 per metre - but much more initially (those installing systems will be forced to learn how to install a brand new, not yet in existence, coaxial cable connector employing tools that are closer to plumber's utensils than today's crimpers!)

Conclusion

This plan has more holes than Swiss cheese and we have but touched the surface here. The shame is that with advance publicity, the broadband deprived citizens now expect a solution - starting as soon as one year. Ultimately, if it survives the first few hundred sites, co-located with existing cell phone towers, the reality of the many planning mistakes will become evident. Salvation will mean up to three times as many towers, and elaborate outdoor antennas for many inconvenienced by shadowing terrain and buildings which function at 3.4 and 5.8 GHz as very effective barriers to transmission and reception. For you? If you now are skilled in C or Ku satellite installations, here will be an opportunity to be in on the ground floor to install systems. With the variety of technical challenges, the silver lining may well turn out in favour of those who are skilled at and enjoy doing 'microwave' installations. Australia has a broadband plan - unfortunately it has only benefited the politicians who are for a short time basking in the glory of the promises being made.

DC ro DC converter apparent cause-

# Isolating the interference source suggests on-board power supply

The problem: When the receiver's UHF modulator output is used to feed a TV set, various forms of noise interference appear in the UHF band, typically above 600 MHz. If the modulator's output channel is set to operate below the band segment where the noise appears, no harm is done; unless - the installation is looping from an (outdoor) antenna other UHF channels which operate on TV channels higher up the band. Now the noise generated mixes with the antenna delivered signals and reception is degrade or totally lost for these OTA channels. Initially, the problem was believed to be a malfunction in the receiver's UHF modulator (SatFACTS 153-154 p. 14). Further testing and laboratory diagnosis suggests the problem is *not* the modulator; rather it is interference generated by the receiver's DC to DC voltage processing circuitry.

This receiver does not have the usual inboard massive power supply (the now routinely used SMPS, switch mode design). Rather it begins with an outboard 240VAC to 12V DC 'wall wart' device which connects to the receiver through as power plug. Some early suspicions focused on wall wart device. But when the receiver is connected to a battery supply , eliminating the wall wart, nothing changes; the interference continues. Eliminate the wall wart.

By using a spectrum analyser and a probe, even from a battery supply, the interference can be found in many locations within the receiver, including the DC voltage line that powers the Samsung modulator. Something inside the receiver internal powering network is identified as the noise/interference generator.

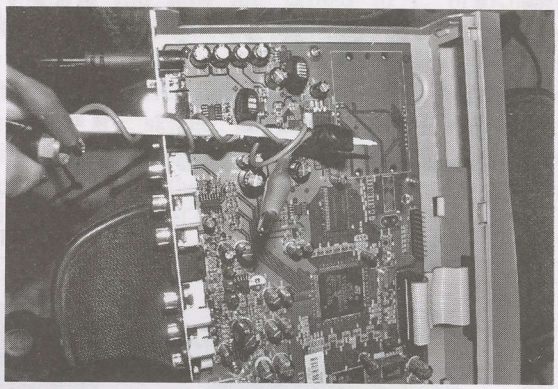
The still common SMPS design often generates signals below 100 MHz (on occasion higher). The DC-DC design operates at much higher internal switching frequency (SMPS being in the region of 50 MHz) and the chip that performs this function is the culprit. This noise in turn feeds through various rail (voltage) traces on the printed circuit board.

Using a spectrum analyser and a simple clip lead 'probe' (photo right) SatFACTS identified more than a dozen points on the board where the noise was as high as 45 dBuV, typically in the 683 to 810 MHz range (NZ channels 47 to 62). In fact, the noise level is much higher (by 20 dB) at spots *on* the main board than it is coming out of the UHF modulator - off-air throughput rear connector. We tested three different receivers, all in the first shipment that arrived in March and found two also had unmodulated signals near 544 MHz (within NZ channel 30) and 661 MHz (channel 44). Both of these were in the region of 22 dBuv which would be strong enough to cause a herringbone patterning if a UHF channel happened to be on either 30 or 44. Changing the modulator frequency had only a minor effect on these two unwanted signals.

Cause and effect

A wide spectrum of noise, going through the modulator's output, creates a noise-barrier to off-air terrestrial TV signals. Changing the TV modulator frequency to below the wide-band noise affected region does not change the noise output - it merely gets the modulator's output space to an area below the first hint of noise - in our three tested receivers, channels from 27-29 and 31 to 42 should be safe. However, for channels from 44 upward to the top end (62) any off-air-aerial fed signals may be battling interference.

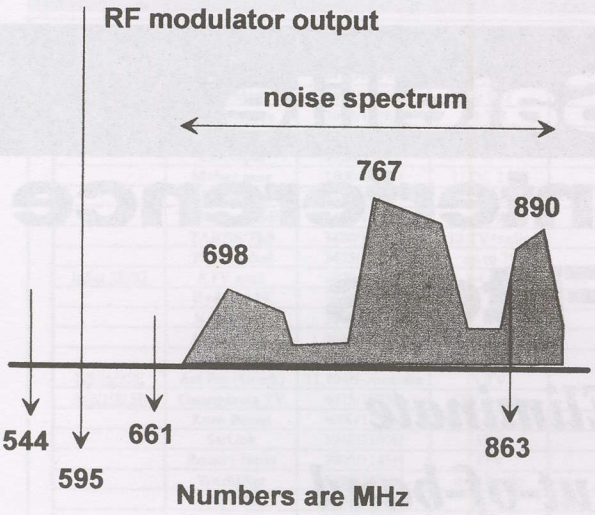
Jentec Technology model G2412-D is 240VAC to 12V DC power supply (2 amp rating) comes with Zinwell Freeview IRD. Yes, it is C-tick approved.



With 12V DC as the input voltage to the IRD, a DC to DC converter (chip) creates the various 'rail' voltages. Where older style SMS power supplies generated high noise levels in the 40-100 MHz region, the new DC to DC units raise noise frequency into the UHF band. Here, a clip lead as a probe connected to a spectrum analyser finds the sources within the chassis for wide spectrum noise on the circuit board.

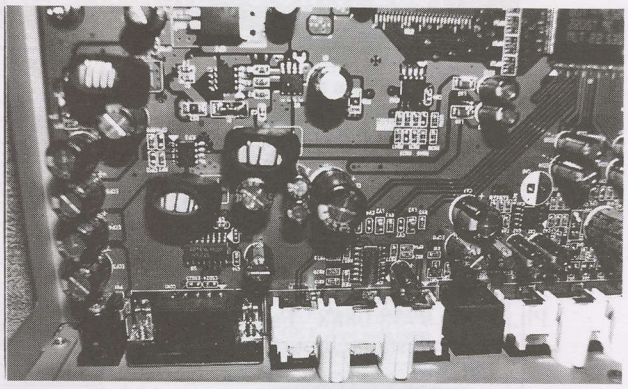
Power supply generated interference is hardly a new phenomenon. As far back as 1980, TV set makers were discovering the dangers. For example, one popular TV set brand of that era created a sub-audible (20 hertz range) signal which could not be heard. But the level was strong enough to burn out audio transformers and even destroy speaker cones. In our present case, the oscillations are significantly above our highest hearing range (typically 12-15,000 hertz) but no less troublesome.

DC to DC converters of the type used in the latest generation of IRDs (and digital terrestrial STBs) are physically small, buttressed with filter capacitors to eliminate l*ow frequency* DC noise. They operate faster than previous devices and thus the considerably higher frequencies affected. On a circuit board, parts are interconnected with small 'copper traces' Each trace has capacity to act as a miniature non-resonant tuned circuit; in




Spectrum plot through modulator RF output female PAL connector socket. Probe tests found hot spots with up to 20 dB higher noise levels at many locations in area of DC to DC converter circuit board. 544, 661 and 863 are unmodulated carriers while 595 is the desired modulator output signal. Height above horizontal line represents relative signal levels.

essence an 'antenna' or at least as a 'transmission line' for the DC to DC converter 'noise generation'. Some of the traces found in the receiver are 10 to 25mm in length and using our analyser connected probe antenna, the most potent noise on the circuit board coincides with these rather long traces, The normal practice is to place decoupling capacitors to filter out



Copper on the circuit board replaces wiring - known as 'traces'. These thin strips unfortunately can also act as 'antennas' creating a radiated or 'coupled' link to other locations throughout the receiver.

noise at both ends of such a trace, thereby reducing or eliminating the transmission line trace ability to function as a coupling circuit. A trace as short as 3mm has the technical ability to radiate 600-800 MHz region 'signals' (noise in this case). Longer traces are especially suspect and our analyser found the strongest 600-800 region noise right along (just above) these longer traces.

Which means? A circuit board designer mistake. *All* DC to DC high speed converters will generate noise but if capacitor protected, the noise is quite harmless as it has no place to 'go'. In this case, the capacitors were either left out (several locations) or placed far enough away from the noise source leads to leave behind a radiating/coupling transmission circuit which allows the noise to flow throughout the receiver, and out at the RF output PAL connector.

## Zinwell's arguments urging a new focus for New Zealand Freeview

"In relation to Freeview's Service planning and receiver authorisations, there would appear to be a wide misunderstanding of the Programmes Services Concept, and consequently receiver authorisations to address planned (programming) structures. The key to the advanced planning is in understanding it has 3 structural and distinct technology initiatives each of which are exclusively addressed by Freeview *approved* receivers.

"1/ A middleware program (MHEG-5) to provide for additional downloaded video services.

"2/ Regional Services Function providing for discreet programming and advertising material by geographic region.

"3/ Over the air (OTA) download of new services as they become available on Freeview (automatically 'future proof).

"Conversely, Free to Air non-approved receivers have no capability to address items 1 and 3 and little if any ability to address #2. FTA 'Zapper' receivers can be seen as lower priced however the significantly expanded software only found in approved receivers adds costs. Royalty fees on the approved IRDs, and the additional engineering time that has gone into 'future proofing' has to be recovered and this in turn explains why they cost more.

"When Freeview TV network programming is fully developed (these are early days), and the MHEG-5 middleware provides automatic downloading of new digital text, games and video channels, customers with *approved* receivers will need to do nothing to stay current with all of the programming available. Zapper receivers will require someone to 'reload' the new services as they come on the air. The first test will come as early as September when 'TVNZ6' comes on the air. Freeview approved receivers will automatically add it to the channel list; Zappers possibly will not.

"There is more. No FTA Zapper receivers can address MHEG-5 instructions and processing. Nor can they download into Freeview's EPG Macronised Vowels in support characters in the Maori alphabet.

"It would be terribly misleading to even attempt comparing an 'approved versus Zapper' design. One is state of the art, ready for unique Freeview services while the other is simply a low-cost FTA receiver first designed and produced ten years ago. When Freeview first went into the marketplace to solicit responses for their advanced technology design concept, 30 manufacturing firms were contacted. Five responded with submissions, and one of those subsequently filed for bankruptcy. The Zapper sellers only have their present suppliers to blame for receivers that were already less than state of the art as recently as 2000. If customers purchasing non-approved receivers discover too late they are missing out on some services, it will be the retailer/dealer who will suffer. How many 'service calls' can you afford to make updating even the channel list as Freeview grows, before you wish you had stuck with approved IRDs?"

Text provided by Zinwell, July 2007

# SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 July, 2007

| Bird | Service | RF/IF &Polarity | # Program Channels | FEC | Msym | Receivers and Errata |
|---|---|---|---|---|---|---|
| Thcm5/78.5 | SkyChAust | 3695/1455H | up to 3 | 3/4 | 5(.000) | CA (#1, 3); FTA audio #2 |
| | **ANT Greece** | 3672/1478H | 1 TV | 3/4 | 13(.333) | Late July 04: room for more (FTA) |
| | **TARBS ME mux** | 3640/1510H | 12TV, 12 radio | 2/3 | 28(.066) | CA + 23FTA(A1TV, IRB3, Visjon Norge,Pakistan) |
| | **Ch Nepal** | 3626/1524V | 1 | 3/4 | 15(.556) | New 03/03; FTA |
| | **Mahar mux** | 3600/1550H | 11TV, 1 rad | 3/4 | 26(.667) | Thai + Indian services; FTA inc. Vibe TV, Sindh TV |
| | **RR Sat mux** | 3551/1600H | 8TV,10 radio | 3/4 | 13(.333) | 3TV, 5radio inc. Hellas TV Greece FTA |
| | **TVK Cambodia** | 3448/1702H | 1TV | 1/2 | 6(.312) | **FTA** |
| | **TARBS/Th5** | 3480/1670H | 12 TV+radio | 2/3 | 26(.667) | **3FTA**: TV5, VTV4, ATN Bangla |
| | **Thai Global** | 3425/1725V | up to 7? | 2/3 | 27(.500) | FTA (reaches SE Australia) |
| InSat 2E/83 | **ETV mux** | 4005/1145V | 6+ TV | 3/4 | 27(.000) | Several ETV now here; wide beam |
| | **Hyd Dig 2E** | 3910/1240V | 1 | 3/4 | 5(.000) | SCPC, OK E. Aust. wide beam |
| | **Kairali TV** | 3699/1451V | 1 | 3/4 | 3(.184) | SCPC, OK E. Aust wide beam |
| | **Indian mux** | 3643/1507V | 3 | 3/4 | 19(.531) | corrections 12/02 |
| | **Sky Bangla** | 3430/1720V | 1TV | 3/4 | 6(.000) | New - November 2002 |
| NSS6/95E | Ant Pac (Greek) | 11.104H-Australia | 1 TV | 3/4 | 2(.800) | Now CA; was 11.083H |
| As2/100.5E | **Guangdong TV** | 4075/1075H | 1TV + radio | 3/4 | 6(.000) | July 04: FTA |
| | **Euro Bouqt** | 4000/1150H | 5TV, 19 radio | 3/4 | 28(.125) | FTA TV + radio; Russia,Port,Spain, Italy/Euro Bqr |
| | SatLink | 3960/1190H | 3TV | 3/4 | 27(.500) | **Real Madrid** (V769, A770) English **FTA** |
| | Reuters News | 3905/1245H | 1TV | 3/4 | 4(.000) | Was 3923H; sometimes **FTA** |
| | **WorldNet** | 3880/1270H | 4+/18radio | 1/2 | 20(.400) | FTA; multiple audio services V2360, A2320 |
| | APTN Asia | 3799/1351H | 1 | 3/4 | 5(.632) | Sometimes **FTA**; also 3895Vt |
| | Reuters/Sing. | 3775/1375H | 1 | 3/4 | 5(.631) | **FTA** & CA |
| | Macau MUX | 4148/1002V | 5TV | 3/4 | 11(.850) | 5 chs TV, FTA, some tests |
| | **Dubai MUX** | 4020/1430V | 4+, radio | 3/4 | 27(.500) | FTA ; Dubai Sports Ch some English, soccer- |
| | **Russian/Israel** | 3832/1318V | up to 4 video | 3/4 | 7(.271) | Two Israel, two Russian (REN-TV) |
| | **ArabSat#2** | 3820/1330V | 8+ video? | 3/4 | 27.5 | New l07-06; 10 FTA here |
| | **Trace TV** | 3792/1358V | 1 | 3/4 | 2(.400) | new here Dec 2004; Euro-French music videos |
| | **BYU-TV** | 3767/1383V | 1 + 20 audio | 1/2 | 6(.530) | Increased coverage; great variety audio chs(03-05) |
| | **3-ch miniMUX** | 3752/1398V | up to 3 | 3/4 | 5(.640) | Sun-TV, Surya TV, KTV (FTA) |
| | **Saudi TV1** | 3660/1490V | 7+/tests | 3/4 | 27(.500) | FTA MCPC; Yemen, MBC EUROsport tests |
| Express2/103E | **Various-tests** | 3675/1475R | 2 | 3/4 | 4(.340) | Now loaded from 96.5E; svrl below 3900 all RHC |
| As3S/105E | **Chinese regionals** | 3671/1471V | 2 | 3/4 | 8(.932) | New 07-06; Yanbian, Jilin Satellite TV |
| | **CETV digital** | 3680/1470H | 1+ TV | 3/4 | 26(.670) | replaces analogue same freq; V33, A32 |
| | Zee bouquet | 3700/1450V | 10TV | 3/4 | 27(.500) | Now SECA 2 CA (10-04); Radio Aust. Eng. A2011 |
| | **Ch News Asia** | 3706/1444H | 1TV (+) | 3/4 | 6(.000) | English + V1160, A1120; 525, 625 versions |
| | **Azio TV** | 3716/1434H | 1TV (+) | 3/4 | 7(.000) | Was parallel to 3640Hz analogue (now gone) |
| | **BTV World** | 3725/1425V | 1TV | 3/4 | 4(.450) | |
| | **TVB 8** | 3729/1421H | 1TV | 3/4 | 13(.650) | |
| | Zee Movies | 3732/1418V | 3TV | 3/4 | 6(.500) | Conax CA, all Hindi films |
| | **TV One** | 3739/1411V | 1TV | 3/4 | 2(.8934 | Also reported 3.333, ¾ October 2005 |
| | **SAB TV** | 3743/2407V | 1TV | 3/4 | 3(.300) | SAB may no longer here here; moved to NSS-6? |
| | **Fashion TV** | 3747/1403V | 1TV | 3/4 | 2(.625) | new frequency October 2005 |
| | **AAJ-TV** | 3750/1400V | 1TV | 3/4 | 2(.820) | New April 2005; English, urdu |
| | **Arirang TV** | 3755/1395V | 1 | 7/8 | 4(.418) | FTA SCPC; New PIDs V3601, A3606 June 2003 |
| | **Now TV +** | 3760/1390H | up to 10TV | 7/8 | 26(.000) | CA + 10 **FTA**; DW, TV5; Al Jazeera English |
| | Star TV | 3780/1370V | 7(+)TV | 3/4 | 28(.100) | NDS CA (Pace DVS211, Zenith) |
| | **GXTV** | 3806/1344V | 1TV + 3 radio | 3/4 | 4(.420) | Guangxi TV; was As2 |
| | **Shaanxi TV** | 3813/1337V | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| | **Anhui TV** | 3820/1330V | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| | **Jiangsu TV** | 3827/1330V | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| | **HLITV** | 3834/1316V | 1TV | 3/4 | 4(.420) | Was As2; HeiLong |
| | Star TV | 3840/1310H | 7(+) TV | 7/8 | 26(.850) | NDS CA (Pace DVS211, Zenith) |
| | Star TV | 3860/1290V | 5(+)TV | 3/4 | 27(500) | NDS CA (Pace DVS211, Zenith) |
| | **Dragon TV** | 3886/1264V | 1 TV | 3/4 | 4(.800) | Shanghai |
| | **Shaandong** | 3895/1255V | 1TV + 6 radio | 3/4 | 6(.813) | Apparently Mongolia |
| | **CCTV1** | 3904/1246V | 1TV, 1 radio | 7/8 | 4(.420) | |
| | **Jilin TV** | 3914/1236V | 1TV + 2 radio | 3/4 | 4(.420) | |
| | Star TV | 3920/1230H | 4+ TV | 7/8 | 26(.850) | |
| | CNNI | 3960/1190H | 8TV, 1 radio | 3/4 | 27(500) | PowVu CA; new SR Apr 29; CNN radio **FTA** |
| | StarTV | 3980/1170V | 6+TV | 3/4 | 28(.100) | NDS CA; Star News India **FTA** VPID 514, APID 648 |
| | **Star TV** | 4000/1150H | 8(+)TV | 7/8 | 26(.850) | NDS CA w/ **4(Chinese) FTA** |
| | **Sahara digital** | 4020/1130V | 8TV, 1 radio | 3/4 | 27(.250) | New Sr September 2004 |
| | **Hubei TV** | 4035/1115H | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| | **Tianjin TV** | 4046/1104V | 1TV + 2 radio | 3/4 | 5(.950) | new December 2004 |
| | **Sichuan TV** | 4051/1099H | 1TV + 1 radio | 3/4 | 4(.420) | Was As2 |
| | **Qinghai TV** | 4067/1083H | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| | **Hunan TV** | 4082/1068H | 1TV + 1 radio | 3/4 | 4(.420) | Was As2 |
| | **Fashion/HK-Asia** | 4088/1062H | 1TV | 3/4 | 2(.626) | New July 2005 |
| | **Pakistani TV** | 4091/1059V | 4TV, 1 radio | 3/4 | 9(.330) | new Sr, channels, April 2006 |
| | **Sun TV** | 4095/1055H | 1 | 3/4 | 5(.554) | "History Channel" - SCPC, some English |
| | **PTV National** | 4106//1044V | 1TV, 1 radio | 3/4 | 3(.333) | |
| | TVB8 Mux | 4111/1040H | 4 TV | 3/4 | 13(.650) | MATV Ch Movies now Irdeto 1 |
| | **Indus News** | 4115/1035V | 1 | 3/4 | 3(.331) | Hindi (+ "Plus"); day parts |
| | **CCTV bqt** | 4129/1021H | 4 TV, 4 radio | 3/4 | 13(.240) | moved from 4115 |
| | Zee Bqt #2 | 4140/1010V | 8(+) TV | 3/4 | 27(.500) | Now SECA 2 CA (10-04); 1 occ. FTA (varies) |
| | **Henan TV** | 4166/984V | 1TV + 8 radio | 3/4 | 4(.420) | Was As2 |
| | **Fujian TV** | 4180/970V | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| | **Jiangxi TV** | 4187/963V | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| | **Liaoning TV** | 4194/956V | 1TV + 2 radio | 3/4 | 4(.420) | Was As2 |
| Cak1/107.5 | Indovision (S-band) | 2.535, 2.565, 2.595, 2.625, 2.655 | 33(+) TV | 7/8 | 20(.000) | NDS CA using RCA/Thomson, Pace IRDs; **2.535 has 2 FTA.** Bird now inclined. |
| T'Kom/108E | **IndoBqt** | 3460/1690H | up to 6 | 3/4 | 28(.000) | also 3586H/17.500, 3496H/19.615 |
| C2M/113E | **TPI** | 4185/965V | 1 | 3/4 | 6(.700) | FTA SCPA; NT/NC only |
| | **Anteve** | 4144/1006V | 1 | 3/4 | 6(.510) | change from 4055V; FTA SCPC |
| | Kabelvision Mux | 4080/1070H | 7+ TV | 7/8 | 28(.125) | also try 3500H, 27.000, 3/4; strong NZ |
| | Indostar | 4074/1076V | 1 | 3/4 | 6(.500) | New (but probably temporary) 07-06 |
| | SCTV | 3934/1216H | 1 | 3/4 | 6(.620) | **FTA,** may not be active full time |
| | Indo MUX | 3880/1270H | 3+ TV | 7/8 | 28(.121) | **FTA;** Sr change 01/03; erratic |
| | TVRI | 3765/1385H | 1TV | 3/4 | 5(.555) | bounces btwn FTA and CA; unreliable (12-04) |

| Bird | Service | RF/IF & Polarity | # Program Channels | FEC | Msym | Receivers and Errata |
|---|---|---|---|---|---|---|
| | **SCTV** | 3726/1424V | 1TV | 3/4 | 6(.620) | was on 4048V; New Caledonia, parts of Australia |
| | **RCTI** | 3473/1677H | 2 | 3/4 | 8(.000) | FTA SCPC;or, 3774H, 6.520, ¾ (June 06) |
| As4/122E | **CCTV MCPC** | 3820/1330V | 8 | 3/4 | 27(.500) | also: 3820V, 3940V,4100Vin blindscan |
| Jc3/128 | Miracle Net | 3996/1154V | 3 up to 6 | 5/6 | 22(.000) | PowerVu; some FTA (Ch. 1 & 3) |
| | Asian bqt | 3960/1190V | up to 8 | 7/8 | 30(.000) | CA & **FTA** NTSC: Japan, Taiwan |
| Ap6134E | Multiple | 4140/1010V | up to 8 | 7/8 | 27(.500) | scan 3500-4200 V+H, analogue 3860V |
| T18/138 | **Tests** | 3460/1690V | 8 | 3/4 | 30(.000) | also try 3660/3540VVt, Sr 30.000, 3/4; some FTA |
| Am3/140 | **STS +** | 3731/1419R | 1 | 3/4 | 3(.200) | North beam; also try 3875R, 12.475, 1/2 |
| Jc2A 154 | **BYU-TV** | 3915/1245V | 1+ 20 languages | 3/4 | 4(.166) (?) | Strong NZ & Australia; may now be 1/2, 6.525 |
| MeasSs2 | **Astro Mux** | 11.602H | up to 17TV | 3/4 | 41(.500) | Aust East beam - **3 FTA** + 14 CA |
| B3/152 | **7 Cent. Feed** | 12.310H | 1TV | 3/4 | 5(.100) | Was B1; moved June 2006, concerns B1 failures |
| | AuroraBiz | 12.407V | 4 TV, 10 radio | 2/3 | 30(.000) | differs from 12.407 C1; **tune ch FTA; NZ+Au** |
| | **UBI** | 12.425V | up to 13 TV + radio | 3/4 | 22(.500) | Now Irdetio V2 |
| | **Globecast 2** | 12.525V | 13 TV, 8 radio | 2/3 | 30(.000) | NZ + Au, FTA + Mcrypt CA |
| | **Globecast (feeds)** | 12.550-.555V | 1TV | ¾ & 2/3 | 6(.110/.670) | occ feeds, NZ + Au; recently 12.553V |
| | **Globecast** | 12.564V/T13 | 2+ TV | 2/3 | 30(.000) | AMTV, Healing only FTA svcs now here |
| | **UBI** | 12.613H/T14L | 11+TV | 3/4 | 22(.500) | High performance beam; not NZ; new CA 07-06 |
| | **UBI** | 12.640H/T14U | 11+TV | 3/4 | 22(.500) | High performance beam; not NZ; new CA 07-06 |
| | **Globecast 1** | 12.658V/T7 | 14TV, 15 radio | 2/3 | 30(.000) | NZ + Au (Mcrypt, PowVu capable) |
| | **UBI** | 12.674H/T15L | 11+TV | 3/4 | 22(.500) | High performancebeam; not NZ; new CA 07-06 |
| | **UBI** | 12.701H/T15U | 11+TV | 3/4 | 22(.500) | High performance beam; not NZ; new CA 07-06 |
| | **WA ABC** | 12.702V | 1 TV, 1 radio | 7/8 | 14(.288) | ABC WA tests, FTA |
| | **WA SBS** | 12.720V | 4TV, 2 radio | 5/6 | 12(.600) | SBS, radio tests WA FTA |
| | **WA GWN/WIN** | 12.738V | 2TV | 7/8 | 14(.295) | Irdeto V2 CA, tests (GWN, WIN) |
| **C1/156E** | Aurora | 12.324V/T1U | | | | not currently in use |
| | Pay TV | 12.365V/T2 | 11TV, 2 radio | 3/4 | 27(.800) | Tests; SBS-NDS CA, others FTA when here |
| | Aurora Home | 12.407V/T3 | 5 TV, 13 radio | 2/3 | 30(.000) | NZ (90cm) + Australia **(Only C1 svc left on NZ)** |
| | Pay-TV | 12.447V/T4 | 5TV, 4 data | 3/4 | 27(.800) | Australia NA only (leakage to Norfolk, New Cal) |
| | Pay TV | 12.487V/T5 | 3+ TV, data | 3/4 | 27(.800) | Australia NA only (leakage); 9-Net x 3 widescreen |
| | Aurora 2 | 12.527V/T6 | 7TV, 20 radio | 3/4 | 30(.000) | Arrow radio (still here), tone FTA |
| | Pay-TV | 12.567V/T7 | 10 TV | 3/4 | 27(.800) | Pay-per-view movies; CA |
| | Pay-TV | 12.607V/T8 | 10 TV | 3/4 | 27(.800) | Pay-per-view movies; CA |
| | Pay-TV | 12.647V/T9 | 10 TV | 3/4 | 27(.800) | Pay-per-view movies; CA |
| | Pay-TV | 12.692V/T10L | 6TV, 27 radio | 1/2 | 28(.650) | ABC for Foxtel/Austar; previously 12.288V |
| | Aurora MUX | 12.728V/T10U | 4TV, 17 radio | 1/2 | 24(.450) | changes September 2005 |
| | Austar | 12.305H/T11 | 6TV, 24 data | 3/4 | 30(.000) | Austar inter; **Expo FTA** |
| | Pay-TV | 12.358H/T12 | 10 TV | 3/4 | 27(.800) | NDS CA + Mcrypt, CA |
| | Pay-TV | 12.398H/T13 | 10 TV | 3/4 | 27(.800) | CA, subscriptions available Australia, Norfolk |
| | Pay-TV | 12.438H/T14 | 6TV, 3 data | 3/4 | 27(.800) | Sky News active; 'Help x 2' **FTA** |
| | Pay-TV | 12.478H/T15 | 10 TV | 3/4 | 27(.800) | CA, subscriptions avail Au, Nrflk; **TVSN FTA** |
| | Pay-TV | 12.518H/T16 | 10 TV | 3/4 | 27(.800) | CA, subscriptions available Australia, Norfolk |
| | Pay-TV | 12.558H/T17 | 10 TV | 3/4 | 27(.800) | "Home"CA, subscription available Australia, Nrflk |
| | Pay TV | 12.598H/T18 | 10 TV | 3/4 | 27(.800) | CA, subscriptions available Australia, Norfolk |
| | Pay-TV | 12.638H/T19 | 10TV, 30 radio | 3/4 | 27(.800) | CA, subscription available Australia, Norfolk |
| | Pay TV | 12.688H/T20 | 11TV | 3/4 | 27(.800) | CA, subscription available Australia, Norfolk |
| **D1/160E** | Sky NZ test | 12.394V | TV + | 3/4 | 22(.500) | + 12.420V, Au + NZ beam |
| | **SBS SE** | 12.451H | TV+ | 5/6 | 12(.600) | +12.469H/Qld, 12.487H/South, |
| | Sky NZ | 12.519V | TV+ | 3/4 | 22(500) | +12.546V, 12.581V, 12.608V, 12.644V: NZ only |
| | Sky NZ test | 12.519H | TV+ | 3/4 | 22(.500) | +12.546H: NZ only |
| | **ABC NSW** | 12.514H | TV | 7/8 | 14(.294) | Australia only |
| | **ABC South** | 12.532H | TV | 7/8 | 14(.294) | Australia only |
| | **ABC Northern** | 12.550H | TV | 7/8 | 14(.294) | Australia only |
| | **ABC Western** | 12.577H | TV | 7/8 | 14(.294) | Australia only |
| | **ABC Victoria** | 12.595H | TV | 7/8 | 14(.294) | Australia only |
| | **ABC Qld** | 12.613H | TV | 7/8 | 14(.294) | Australia only |
| | **Southern Cross** | 12.744V | TV + 1 radio | 3/4 | 5(.100) | Australia only |
| | Sky NZ Test | 12.644V | TV | | | +12.671V, 12.707V, 12.734V: NZ only |
| **I8/166E** | SelecTV | 12.526H | 8+TV | 3/4 | 28(.800) | &12.286, 12.326; **FTA** prev..526 V10112, A1012 |
| | **CCTV** | 12.557H | 3+TV | 3/4 | 13(.240) | **FTA**-Australia |
| | ABS-CBN | 12.575H | 4+TV, 4+ radio | 2/3 | 13(.845) | CA -Australia |
| | MYSAT | 12.646H | up to 8 TV | 3/4 | 28(.066) | FTA V=5340, A=790 -Australia |
| | JEDI/TVB | 12.686H | 11+ TV | 3/4 | 28(.126) | June 2002-Irdeto-2 CA - Australia |
| | PnGlobal Aust | 12.726H | 6+TV | 3/4 | 28.(066) | Some **FTA**-Australia |
| | **ABC A-P** | 4180/970H | 2TV, 2 radio | 3/4 | 27(.500) | Dateline west; also east PAS2, 3901V |
| | **Hallmark Asia** | 4166/984H | 1 TV | 3/4 | 6(.620) | Temporary FTA (January 2007) |
| | Disney Pac | 4140/1010H | typ 6 TV | 5/6 | 28(.125) | PowVu CA |
| | **Hwazen TV** | 4130/1020H | 1 TV | | | |
| | NHK Joho | 4060/1090H | 7TV, 1 radio | 1/2 | 16(.180) | PowVu CA & **FTA**; sub available-changes 05-06 |
| | FOX Mux | 4040/1110V | up to 5TV | 7/8 | 26(.470) | was PAS-2, previously 3992Vt; **feeds FTA** |
| | **NET +** | 4121/1029V | 1 TV | 3/4 | 4(.774) | NET25 + FTA; new PIDS April '03; reload |
| | ESPN USA | 4020/1130H | 8+TV, data | 3/4 | 26(.470) | PowVu CA; ch 11 DCP-CCP bootload; audio **FTA** |
| | Discovery | 3980/1170H | 8 typ. | 3/4 | 27(.690) | PowVu/CA (some audio **FTA**) |
| | **CalBqt/Pas8** | 3940/1210H | up to 3+ FTA | 7/8 | 27(.690) | PowVu CA & **FTA (EWTN + CBS +TBN +)** |
| | CNBC HK | 3900/1250H | up to 7TV | 3/4 | 27(.500) | NDS CA (6 channels); one test card occ FTA |
| | FilipinoMUX | 3880/1270V | up to 8TV+radio | 5/6 | 28(.694) | **Myx FTA** V1960, A1920 + radio FTA |
| | **CCTV Mux** | 3829/1321H | up to 4 + 1 radio | 3/4 | 13(.240) | PowVu FTA, replaces PAS-2 svc |
| | TVBS-N | 3836/1314V | **1FTA**, 4+ CA | 3/4 | 17(.500) | CCTV cross pole; new SR 04-06 |
| | EMTV PNG | 3808/1342V | 1 + 2 radio | 3/4 | 5(.632) | PowVu CA |
| | CNNI | 3780/1370H | 3, up to 5 TV | 3/4 | 25(.000) | PowerVu; some audio **FTA** |
| | Discovery Asia | 3764/1386V | Up to 6 TV | 3/4 | 19(.850) | PowerVu; Asian MUX; new parameters Nov '03 |
| | MTV | 3740/1410H | 8 | 2/3 | 27(.500) | # 8 **MTV China FTA V289, A290;** rest CA |
| 12/169E | WA Mux Pv | 12.281V | 3+ TV, radio | 2/3 | 27(.500) | PowVu CA, WIN, ABC NT, SBS; status unknown |
| | **Ariang TV** | 12.401V | 1TV | 3/4 | 4(.400) | Test - may not stay permanently |
| | ABS-CBN | 12.575H | 4TV, 2 radio | | 13(.845) | Temp **FTA**; subs Aust 011-800-2270-0722 |
| | Test mux | 12.715H | 6+ TV | 2/3 | 30(.000) | initially with 6 NTSC colour bars |
| | TARBS feeds | 4090V/1060V | 9TV + radio | 3/4 | 21(.000) | Occ **FTA** (Chile +); BIG power reduction Nov 03 |
| | **BBC SCPC** | 3986/1164H | 1TV | 1/2 | 5(.700) | BBC World moved here January 2005 |
| | Middle East | 3836/1314V | 4 typ | 3/4 | 13(.331) | Subscriptions available; Strong Technology |

| Bird | Service | RF/IF & Polarity | # Program Channels | FEC | Msym |
|---|---|---|---|---|---|
| (PAS2/169E) | **Adventists.tv** | 4040/1010H | 1 | 2/3 | 5(.900) |
| | **Feeds** | 3868/1182H | 1 | 2/3 | 6(.620) |
| | **Feeds** | 3939/1211H | 2 (typ NTSC) | 2/3 | 6(.620)/7(.498) |
| | Cal PowVu | 3901/1249H | up to 8 | 3/4 | 30(.800) |
| | HK bouquet | 3850/1300H | up to 8 | 2/3 | 24(.900) |
| | **Korean Bqt** | 3771/1379H | 1 | 3/4 | 6(.510) |
| **AMC23/172E** | **Various-tests** | 12.730H | up to 8 | 3/4 | 30(.000) |
| **I804/174E** | **iPSTAR** | 12.619H | 1 | 2/3 | 25(.220) |
| | **Tests-NZ beam** | 12.646H | 1 | 3/4 | 22(.418) |
| | **RFO Poly** | 4027/1123R | 1TV | 3/4 | 4(.566) |
| **I701/180E** | TNTV | 11.060&11.514V | 9 | 3/4 | 30(.000) |
| | **TVRFO** | 11.136V, 11.174V | 6+TV, 3+ radio | 3/4 | 23(.149) |
| | Canal+Sat | 11.610H | 16TV, 1 radio | 3/4 | 30(.000) |
| | PBS | 12.648HH | 16TV possible | 3/4 | 28(.066) |
| | TVNZ/BBC | 4186/964RHC | 1 | 3/4 | 5(.632) |
| | TVNZ | 4178/972RHC | 1 | 3/4 | 5(.632) |
| | AFRTS DTS | 4175/975L | 3 TV, 3 radio | 2/3 | 3(.680) |
| | TVNZ/Aptn | 4170/980RHC | 1 | 3/4 | 5(.632) |
| | Fiji Sky Pacific | 4095/1055LHC | 6TV + future radio | 3/4 | 16(.505) |
| | Fiji Sky Pacific | 4055/1095LHC | 7TV + future radio | 3/4 | 16(.505) |
| | TVNZ/feeds | 4052/1098RHC | 1 | 3/4 | 5(.632) |
| | **TVNZ feeds** | 4044/1106R | 1 | 3/4 | 5(.632) |
| | NBC to 7 Oz | 3960/1190R | 1 | 7/8 | 6(.447) |
| | **TBN Mux** | 3927/1223R | 4TV | 2/3 | 11.(394) |
| | **WorldNet** | 3886/1264R | 1TV, 37 radio | 3/4 | 25(.000) |
| | **Ioarana** | 3772/1378L | 1 | 3/4 | 4(.566) |
| | **NASA TV** | 3854/1296R | 1 TV | 3/4 | 2(.000) |
| | TVNZ | 3846/1304R | 1 | 3/4 | 5(.632) |
| | **NBA (Barker) Ch** | 3803/1347R | 1 | 3/4 | 6(.111) |
| | USA feeds | 3749/1401R | 4? | ? | 26(.400) |
| NSS-5/177W | Pacific IP Data | 3763/1387R | none-data | 3/4 | 27(.500) |
| | **RFO/Tempo** | 3920/1230R | 1 | 3/4 | 2(893) |
| | **Wallis/Futuna** | 3922/1228L | 1 | | 2(.895) |
| | **BYU-TV** | 4185/965R | 1TV, 20+ audio | 1/2 | 6(.525) |
| | **Australia Temp.** | 12.522V | 8 SCPC | 7/8 & **5/6** | 14.294 & **12.600** |
| | **iPSTAR Tests** | 12.691V | 8 TV | 5/6 | 17(.600) |

| Receivers and Errata |
|---|
| New December 2003; 24/7 "Hope Chs." |
| FTA (occ sport); also try 3863,Sr6.100 |
| FTA-typ NTSC-occ sport, live Shuttle |
| PowVu CA + **FTA**(includes BBC-W 05-05) |
| was 4148Vt; some **FTA** |
| Korean MUX, reload 12-04; new Sr |
| Testing on NZ/East Australia beam |
| Tests, late May start; also 12.646H |
| Testing possible data links; June 2003 |
| SE spot beam; was 4027LHC |
| east spot; 10TV + r each, vertical pol. |
| **FTA** 11.136 Tahitian beam, 11.174 west beam; 12/04 |
| 1+ **FTA**, MediaGd "2"; + 10.975 weaker |
| Testing Fiji region pay-TV (MDS) package (Oct '04) |
| DMV/NTL early vers. occ feeds, typ ca |
| DMV/NTL early vers., occ feeds, typ ca |
| 'DTS Direct to Sailors; audio previously FTA - gone |
| DMV/NTL early vers. occ feeds, typically ca |
| Nagravision CA (> Feb 1, 2005) New PIDS |
| All now (including Fiji 1) CA; 7 Feb, 2005) |
| DMV/NTL early vers.,occ feeds, typ ca |
| SCPC, mixed CA and **FTA** feeds |
| CA, Leitch encoded |
| January 2006-now 4 channels, new Sr |
| New PIDs Dec 03 very strong NZ, Pacific |
| FTA SCPC; East Hemi Beam-Tahiti |
| 24/7 live NASA - West Hemi bm (can be difficult!) |
| SCPC, mixed CA & **FTA**, feeds |
| NBA feeds - probably CA - new Nov 2003 |
| 16-QAM (not MPEG-2 compatible) |
| Data only but useful for dish alignment |
| Wallis & Futuna Island(s) service |
| Outward bound W & F |
| Global beam - requires sizeable dish |
| Aust beam: 12.522, 538,555,574,604,**621**,**639** & **657** |
| CA Tests - Taiwan TV; data coming?? (NZ beam) |

## MPEG-2 DVB Receivers: (Data here believed accurate; we assume no responsibility for correctness!)

**AV-COMM R3100**. FTA, excellent sensitivity (review SF May 1998); new version Sept. '99. AV-COMM P/L, 61-2-9939-4377.
**AV-COMM Tiny Tot.** FTA, 12Vdc operated, palm sized, low power consumption; review SF#120. Contact # above.
**Coship 3188C**. Review SF#107. Blind search FTA rcvr; works well. Phoenix Technology Group (www.phoenixsatellite.com.au) (Irdeto 2 as well as FTA versions)
**Coship FTA, CA, HDD.** Review SF#143, state of art functions, blind search. Phoenix (above), Satlink NZ, fax 64-9-814-9447;
**Divitone:** "Left-handed" review SF#115; does "code key" entry. Available http://www.satmax.ws
**eMTech** eM-100B (FTA), eM-200B (FTA + Clx2), eM210B (FTA + 2xCI + positioner); KanSat 61-7-5484 6246 (review SF#89)
**eM-150/Homecast**. FTA + embedded multi-format, review SF#144. Sciteq (61-8-9409-6677) and Kristal (61-7-4728 7704)
**Fortec Star Lifetime**. Two versions, both blind search, code-key programmable, one X 2 CI. Review SF#119. www.aDigitaLife.com
**Homecast** (em-150, eM-1150, eM-2150) series of FTA, CA, HDD sate of art STBs, review SF#144. Sciteq (www.sciteq.com.au)
**Humax ICRI 5400** (Z). Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available; new software avail 04-04, SF#76.
**Humax IRCI 5410** (Z). Adaptable version capable of holding multi-CA systems (SF#98, 99). Widely available; original importer Sciteq (www.sciteq.com.au).
**Hyundai-TV/COM.** HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good; later 5.0 not good.
**Hyundai HSS700**. FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.
**Hyundai HSS800CI**. FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above; review SF#63.
**INNOVIA IDS3088**. Review SF#111. Blind search FTA receiver. High quality IRD; available Phoenix TechnologyGroup, and Satmax (http://www.satmax.ws).
**ID Digital CI-24 Sensor**. New August 2003; new lower noise tuner, extra sensitivity; CI Interface slot Irdeto 1 & 2; review SF#109. Sciteq 61-8-9409-6677.
**KSF-570** FTA digital receiver, import; KSC-570 adds CI x 2 (no test or user results available). Asoft Limited, 64-4-234-1096
**KSC-N550H2** 'Premium Dual DVR' digital receiver (no test or user results available). Asoft Limited, 64 4 234 1096
**MediaStar D7.5**. New (May 00) single chip FTA; review June 2000 SF. MediaStar Comm. Int. 61-2-9618-5777 (www.mediastar.com.au)
**MediaStar D10.** FTA and Irdeto embedded CA. VG receiver; see review SF#96, August 2002. Contacts immediately above.
**MultiChoice (UEC) 660**. Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738
**Nokia "d-box" (V1.7X).** European, FTA, may only be German language, capable of Dr. Overflow software. SF#95, p. 14.
**Nokia 9200/9500.** When equipped with proper software, does Aurora, originally did pay-TV services provided software has been "patched" with "Sandra" or similar program. See SF#95, p. 14, SF#96 p. 15. SatWorld 61-3-9773-9270 (www.satworld.com.au)
**Pace DGT400/DVR500**. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818). UECs replaced.
**Pace "Worldbox"** (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version (see SF#115, p. 15).
**Phoenix 111, 222, 333** models (no longer produced): Service, backup - Phoenix Technology Group 61 3 9553 3399; www.phoenixsatellite.com.au
**Pioneer TS4.** Mediaguard CA (no FTA), embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)
**PowerVu** (D9223, 9225, 9234). Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, CMT etc). For service only - call Scientific Atlanta 61-2-9452-3388. For revision model D9850, see Scientific Atlanta (below).
**Prosat 2102S**. FTA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738.
**SatCruiser DSR-101**. FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-2749); no longer available.)
**SatCruiser DSR-201P**. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above); no longer available.
SATWORK ST3618. Blind search FTA receiver. Fast search, problems, especially in "memory-filing" system; review SF#111. Available DMSi at tim@dmsiusa.com.
SATWORK ST3688. Blind search, 3000+ ch memory, multi-format RF modulator; improved version 3618. Review SF#113; available DMSi (above).
Scientific Atlanta D9223, D9234, D9225; Orig. PowerVu, superceded Dec 2003 by D9850. Commercial receiver, available TVO 61-2-9281-4481, John Martin
**Strong Technologies SRT2620**. SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review SF#91 (ph. below).
**Strong SRT 4600**. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Technologies 61-3-8795-7990.
**Strong 4800**. SCPC, MCPC, embedded Irdeto+ CAM slots, does code-key with additional software, Aurora. Strong Technologies 61-3-8795-7990.
**Strong 4800 II**. SCPC, MCPC CAM slots x 2 for Aurora +, Zee, Canal +, code key with additional software. Strong Technologies (above); review SF#103.
**Strong 4890**. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSEqC 1.0, 1.2 (review SF#84), does code key with additional software; Strong Technologies, # above.
UEC Atlas/Titan (1000). New July 2003, replacing DGT400 for Austar. No SCART, L-band loop; also available Rural Electronics 61-2-6361 3636.
**UEC642**. Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA; faulty P/S. Norsat 61-8-9451-8300.
**UEC660**. Upgraded UEC642, used by Sky Racing Aust., Foxtel,limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.
**UEC700/720**. Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers; propensity to fall off back of trucks.
**"X" Digital**. When modified with "aftermarket" Internet softwre, does Aurora and other V-1 CA without card; review SF#119. Strong Technologies (61-3-8795-7990).
**Zinwell ZMX-7500.** Approved NZ Freeview, through authorised dealers; review SF#150; some unresolved technical issues as of June 2007.

### Accessories:

**Aurora smart cards**. MCRYPT (Irdeto V2) cards now available (Jan 2005), Sciteq 61-8-9409-6677.
**PowerVu Software Upgrade**: PAS-8, 4020/1130Hz, Sr 26.470, 3/4; pgm ch 11 and follow instructions (do not leave early!)
**PowerVu (Pacific) repair service**: Cable & Sat Svcs, Darius West, 61-2-9792-1421 (Email darius@cases.net.au)

# WITH THE OBSERVERS

**AT PRESS DEADLINE**

Two new satellites to watch for; ChinaSat 6B at 115.5E - just 'above' Palapa at 113E. And Sinosat 3 at 125E - just 'above' AsiaSat 4. Both have significant C-band capacity.

**Satellite launches:** BSAT3A to 110E, 12 Ku, August 7, JCSAT 11 with 30 Ku, 12C transponders September 7 - location not announced.

**AsiaSat 2/100.5E** "Iran's Press TV new on 3660V, 27.500, 3/4; www.press.tv (see B3, below)." (**IF,** Qld.)

**AsiaSat 4/122E**: "3820V is latest new transponder to fire up; FTA, Sr 27.500, 3/4; CCTV programming." (**Howard**)

**ChinaSat 6B/115.5E**; Successfully launched

**Optus B3/152E**: "Press TV is new English language 24 hour 'news channel originating from Iran (12.564H, Sr 30.000, 2/3). It is basically anti-Bush, anti-war and pro-Islam. Parameters are VPID 1960, APID 1920. "Strangely, there is another new Iraqi channel as well; 'Al Forat' on the same transponder, V 2060, A 2020 and data rate varies between 1.5 and 3 Mbit/s but this one is not in English." (**IF**, Qld) "Globecast has corrected their 12.657V (30.000, 2/3) FTA radio channel from 'service type 01' to 02 so it now properly loads as a radio channel . T5/12.525V (30.000, 2/3) Indian Pay-TV (TTV) is now Irdeto 2 while 'Deepam TV (V=2360, A=2320) has been FTA since early June. Similarly, Hungarian 'Duna' is FTA (V=2665, A=2625) - www.dunatv.hu." (**IF**, Qld) "The 3 SCPC ABC news feeds (T9/12.391H, 12.328H and 12.337H - all Sr 6.890, 3/4 with V=308, A=256) sometimes change to V=4194, A1=4195, A2 = 4197 for Rugby." (**Joseph**) "Globecast has added two new outdoor broadcast units; GCAST 1 has been seen on 12,300H (Sr 6.670, 3/4) while simultaneously 'Globecast 1' was on 12.555V (Sr 6.670, 3/4)." (**IF**, Qld) T3/12.407V, Optus Business, 'SKY8' has changed PID numbers: V=592, A=593, text = 107." (**AI**, NSW)

**Optus C1/156E**: T3/12.407V, 'Info 156E '(Sr 30,000, 2/3)continues to air (between advisory pages concerning smartcards) promotion for 'Optus Broadband Satellite Internet' although the small print advises 'Offer expires June 30th' (still on July 7). 'BTV1' (also 12.407V, for a few weeks at a time changes their PIDs (normally V=96, A=97; or V=64, A=65). T2/12.367V (Sr 27.800, 3/4) with Al Jazeera English (V=1121, A=1122) hidden from Foxtel and Austar receivers. T13/12.398H (Sr 27.800, 3/4 was running 16 x 9 colour bars FTA hanging to CA late June, but apparently no programming here (yet) on the two channels as the data rate remains a constant 1.1 Mbit/s. The EPGs for both currently reads '4007 or 4008' which translates to SID 4007 being V=4071, A=1072 while SID 4008 is V=1081, A=1082. Correction: T19, 12.638H (Sr 27.800, 3/4) has 'NG Adventure', not National Geographic' (V=1031, A=1032). 'National Geographic is on T12/12.358H, 27.88, 3/4 (V=1081, A=1082." (**NS**, Victoria)

**Sinosat 3/ 125E** This satellite is now at 125E.

**Soapbox:** "Reference compact fluorescent bulbs which are known to cause radio frequency interference (SF#153-154, p.4) - when we are measuring danger, add that mercury is one of the ingredients. Here in NSW, government is paying for bulbs and their installation. A neighbour has had more than 50 bulbs installed - all in the name of credit credits." (**Nigel**) "TPG, the ISP that tried to make a go of the 'Boomerang' satellite service, is promoting a new IPTV (Internet Protocol TV) delivery which, for a 'trial period', is without cost. The service is limited to locations where the data rate is 3.5 Mbp/s (or faster). Advertising claims speeds to 20 Mbp/s or

### A battle for 3.4 - 3.7 GHz spectrum

A serious battle for spectrum rights has erupted throughout Asia. At risk is a loss of the lower 300 MHz within the 3.4 to 4.2 GHz region because powerful commercial interests in the wireless broadband world covet the spectrum. In many Asian countries (for example China - Apstar 6/134E, Indonesia - Telekom 1 - 108E and Thailand - Thaicom 5, 78.5E) ) national networks are dependent upon the lower 300 MHz to link. Throughout Africa,
cellular backhauls depend upon 3.4 - 3.7 GHz for VSAT satellite links. This includes isolated ATM machines linked to central control in the lower C-band region. Where W iMAX/IMT has begun operations (Australia, for example) C-band users have been forced to install expensive filtering equipment, or move closer to 4.2 GHz to avoid the powerful interference. And it promises to become worse; several European countries are pushing to have the entire 3.4 to 4.2 C-band opened up for IMT services. This will come to a head, or at least serious debate, late his year during the World Radio Conference.
The pressure to open up 3.4 to 4.2 comes down to a brand new family of WiFi+Cellular telephones scheduled to be released late this year. By adding WiFi to the existing cellular coverage, users will gain VoIP access - essentially making world-wide calls at token rates (example: $1 per minute calls at $0.02)/. WiFi will feed this urgency to gin access to the complete 3.4 to 4.2 GHz region.

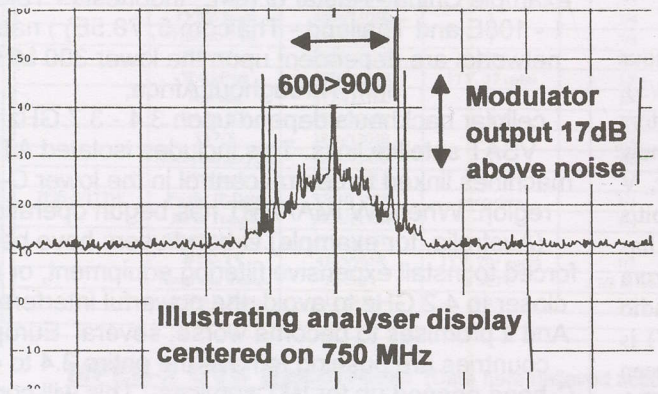
**WITH THE OBSERVERS:** Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. **Photos of yourself, your equipment** or off-air photos taken from your TV screen **are welcomed**. TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady. Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you. Deadline for August 15th issue: August 4th by mail or 5PM NZT August 5th if by fax to 64-9-406-1083 or Email skyking@clear.net.nz.

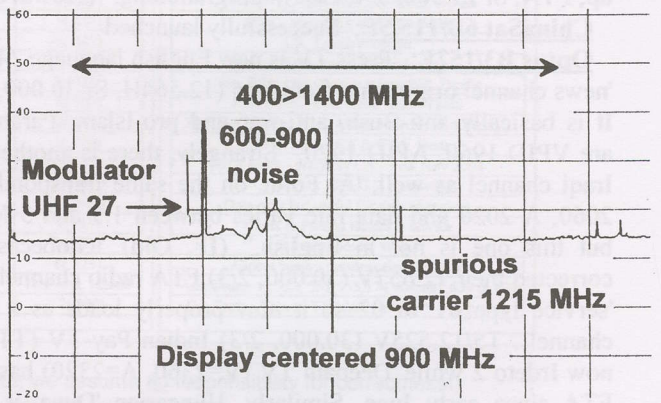
## Clarifying the C-Tick debate

The arguments continue whether broadband noise (created by the DC to DC voltage processing circuits) is in fact something that slipped by the folks who "certified" the receiver with C-Tick approval. An 'unofficial response' from the NZ agency charged with monitoring approvals advises SatFACTS:

"CSPIR13 specifies that 'a video modulator (within the STB) allows spurious signals at levels up to 46dBuv (200 microvolts at 75 ohms). It is quite true that units passing this test will still cause noise (interference). But certification of meeting CSPIR13 involves measuring these levels at the RF output connector; what levels as may exist inside the device are of no interest - only those leaving the receiver (page 20, here). If a power supply generates noise that affects the receiver or processing parts, that is not our concern."

This should clarify for those who believe the receiver in question is in violation of C-Tick. However, for an analogue format signal to be clean of interference, the signal must be at least 40 dB stronger than the interference. If the noise level is +46dBuV, the internal modulator and all UHF off-air signals outputting the receiver must therefore be +86 dBuV or stronger - whereas the standard modulator outputs in the region of +70dBuV and UHF OTA signals passing through are typically between +60 and +70dBuV. Below, two spectrum analyser sweeps illustrating a stock receiver producing 17dB more signal than noise.



These firms are available to do contract dish installs

**Fiji Islands**

C.B. Communications, **Sigatoka** (Ph6520227; cbcom@connect.com.fj)
Safeway Electronics Ltd, **Suva + Lautoka + all islands** (Ph 3395300/6666822; safeway@connect.com.fj)
SATSHEK Communications, **Suva** (Ph3307933; parmarbros@connect.com.fj)

**New Zealand**:

Tauranga TV Svcs Ltd, western **Bay of Plenty** (ethnic Ku packages) (Ph 07 578 7276; dave-tts@clear.net.nz)
Town & Country Communications, **Canterbury** (Ku systems) (027 630 534; brendon.tnc@paradise.net.nz
Raycom, **Coromandel Peninsula/Waihi/Tairua** (B1 FTA) (Ph 07 864 8083; raycom@slingshot.co.nz)
Frontline Electronics, **Mosgiel** region (ethnic Ku packages) (Ph 03 489 4001)
Advanced Aerials, **Napier/Hawkes Bay**, comcls (Ph06835 6618/021 272 6618; advanceaerials@xtra.co.nz)
Nelson TV & Video Svcs, all **Nelson Bays** (Ph 03 548 0304; ntv@tasman.net)
Rexels AV Electronics Ltd, **Palmerston N, Manawatu, Hawke's Bay, Wanganui** (Ph 06 357 6186; rlblair@infogen.net.nz)
John Stewart, **southland** including Otago (john.s@tritec.co.nz)
The Antenna Man, **Taranaki** (Ph 06 758 1633; antenna.man@xtra.co.nz)
Quality Pics, entire **Waikaito** region (Ph 0800 007 667; maxnkay@xtra.co.nz)
Smartzone, **Wellington-Wairarapa-Palmerston N** (C+Ku) (Ph 029 289 6333; info@smartzonesystems.co.nz)
Homestead HiTech, **Wellington, Masteron-Levin** (PAS-2, B1, B3) fitzgera@ihug.co.nz)
Waipu Cable Television, **Wellsford to North Cape** (*Bluekiss*), (Ph 09 4320 973; waipucable@xtra.co.nz)

**Australia Wide**

Regional Outcomes (60+ locations, **all states, territories**) (03 9923 7333; installs@regionaloutcomes.com.au)

**New South Wales**:

Woolgoola Antenna Service, **Coffs Harbour** (50km radius) (Ph 0266561889; woopaerials@iprimus.com.au)
Town & Country Antennas, 60km radius **Murwillumba/Tweeds Heads** (Ph 02 6672 8595)
Newcastle Satellite, **Newcastle + Lwr Hunter Vly** (Ph 0249614449; satellites@netcentral.com.au)
Home Satellite TV, 40km radius **Port Macquarie** (Ph 02 6584 3838; kazbah25@optusnet.com.au)
Goodcom Communications P/L, 100km radius of **Walcha** (Ph 02 6777 1044; goodcom@northnet.com.au)

**Northern Territory**

ALLSAT TV, **Darwin and NT**; (Ph 041 863 3720; allsat.tv@pacific.net.au)

**Queensland**:

Cape York Electronics, **Cooktown and "the cape"** (started 1970s) (Ph 07 40 695 252; cyectn@tpg.com.au)
Phil's Antenna Systems, 100km radius of **Hervey Bay** (C+Ku since 1996). (Ph 0741 256 273)
Rick Dalton TV & Satellite, 100km of **Kawana Waters** (C + Ku). (Ph 07 5493 4343; rick@antechtv.com.au)
Teleworks, 100km of **Cairns** (C + Ku). (Ph 0412 84115; rajvrm@aol.com)
Videotronics Mackay, **Mackay/Whitsundays** radius 200km. (Ph 07 495 575 052; sales@videotronics.com.au)

**South Australia**

Central Eyre Comms, **Arno Bay-Eyre Penins.** (Ph 08 8628 0203; centraleyrecomms@ozemail.com.au)

**Tasmania**:

.65 Electronics, **Launceston and Northern Tasmania** (Ph 03 63 330820; sales@65group.com)

**Victoria**:

Riviera Satellite Antenna Svcs, 100km radius **Bairnsdale** (Ph 03 5152 4884; gilhooleystv@net-tech.com.au)
Leden Communications, (100km radius) **Glengarry** (Ph 0427 745105; leden@netspace.net.au)
Geoff's Communications, 60km radius **Korumburra** (Ph 0408 582010; gwyhoon@tpg.com.au)
Foreign Satellite TVP/L, **Melbourne (region)** C+Ku since 1995 (Ph 040445509; joe12@dodo.com.au)

**Solomon Islands**

Satellite Solutions, **Honiara + all Solomon Islands** (since 1994) (Ph 677 25589, satsol@solomon.com.sb)

**Thailand**:

JSAT tv/Jon Clarke, **ex-pat community - nationwide** (Ph +661 513 5418; info@jsat.tv)

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ADSL2+; $49.99 per month with an 18 month contract. See www.tpg.com.au." (**AI**, NSW) "Reference 'At Press Deadline" (p. 32, SF#153-154). It was seen June 9 and 30th, both Saturdays. I suspect it is a wide-bandwidth HD. Ten broadcasts some FL games in HD." (**NS**, Victoria) "UBI currently has two unused TV channels: 12.452H channel 87 and same transponder channel 88." (**Norman**) "SelecTV versus Austar. Austar is currently advertising 'no lock-in contract' while SelecTV responds with 'pay TV with less to pay'. I now believe SelecTV is here to stay but I doubt it will take away many long time Austar subscribers. Austar monthly fees have constantly increased (some locals now pay more than $80 per month for a single receiver). SelecTV also benefits by the ex-Austar folks who still have the dish, LNBf and cable functional.." (**David**) "Regarding page 1 SF#153-154 and the 25 technical innovations which have most changed lifestyles in the last 25 years - this suggests to me the

new Apple iPHONE will be a super success - in one device there will be four of the top 25 all rolled into 1." (Arnold)

**BBC Expansion Underway**

BBC World earned 111.1 million pounds profit in 2006 - 2007 transmitting 28 channels world-wide. Major expansion is underway in Australia, China, India and the US.

**ANZ Teleport**

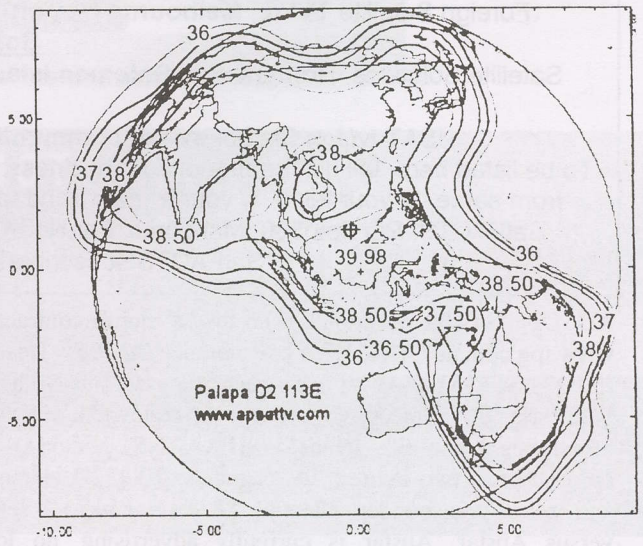
"To the best of my knowledge ANZ Teleport is ownedby the sme people as ONE B; I hve nothing at all to do with this operation. Auckland Teleport usess NSS5 for global Hemi and South West zone, C-band and can also access New Zealand on Spot 1 and Australia on Spot 2. While we are looking at Intelsat 8 for future for future NZ to NZ Ku coverage, we are more than happy with NSS5 until it is relocated in 2009 then we will still elect to use NSS9 for gobal and regional connectiviy as we have found I8 not able to provide the kind of global access we require.

**Invision Multicultural TV in Auckland**

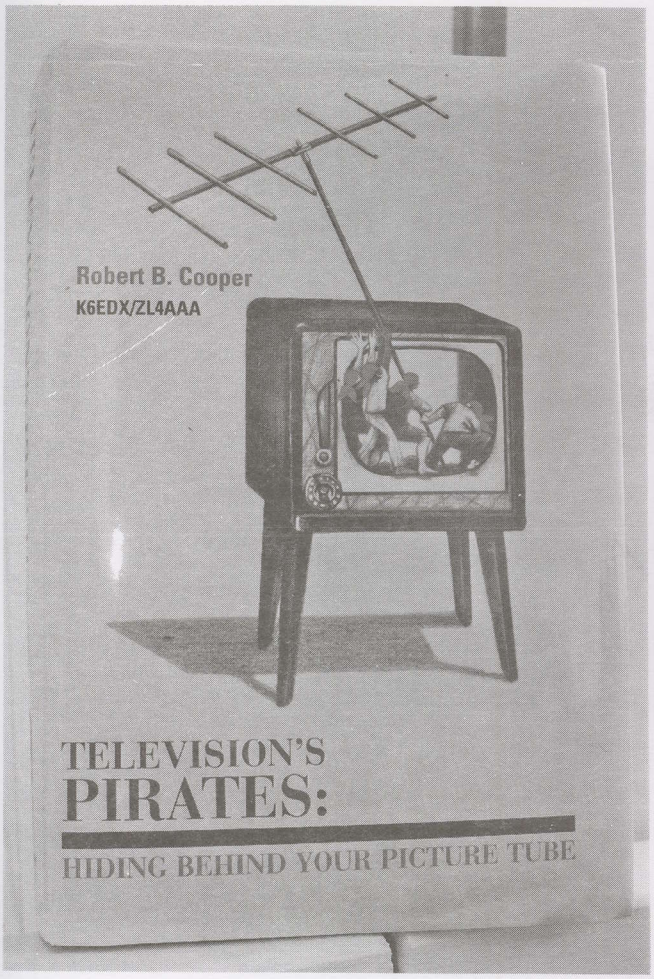
Orcus Broadcasting is now testing 14 channel multicultural from transmitters at Sky Tower and Waiaturua (12.338). Orcus also plans an additional 14 channels on 12.266 GHz. A third frequncy, 12.302, will function as a link from its Newton Road broadcast center to its uplink at AucklandTeleport facility at Carlaw Park for its forthcoming satellite service.

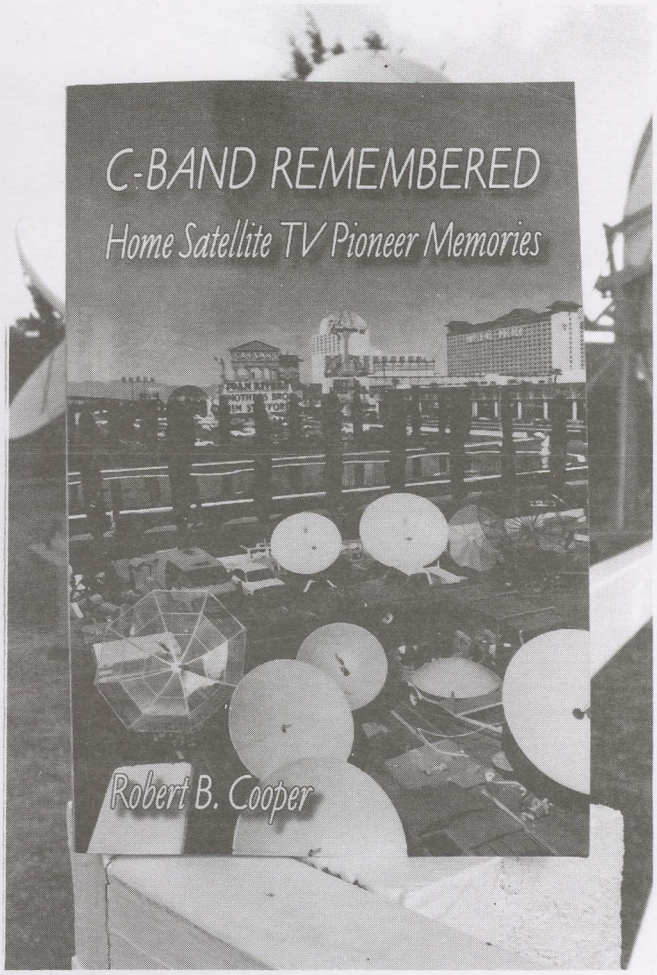
Tony Dunnett

More powerful replacement for Palapa C2, D2 at 113E; for most of us 2 dB stronger; late 2009. Data courtesy www.apsat.com.



# TWO FROM COOP:
# ACCLAIMED WORLD-WIDE.

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Page 32 for
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☐ **C-Band Remembered** - the (227 page) book written by dozens of industry pioneers, their own stories, in their own words, revealing how America's export of C-Band technology changed the world; new April 2007.

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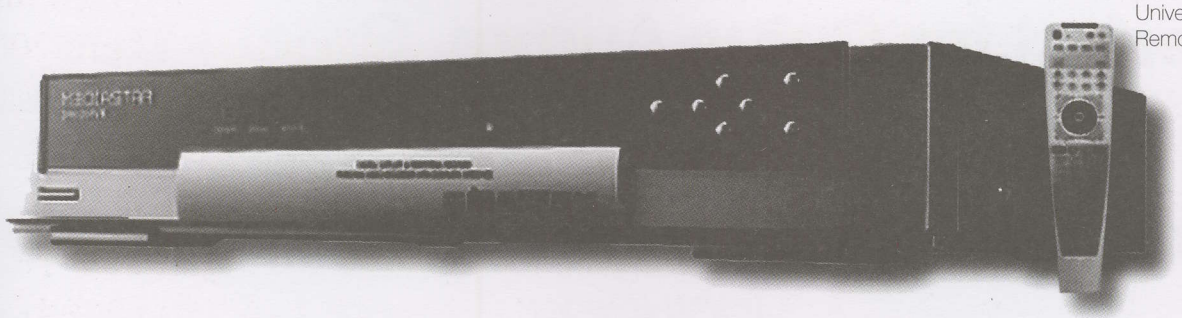


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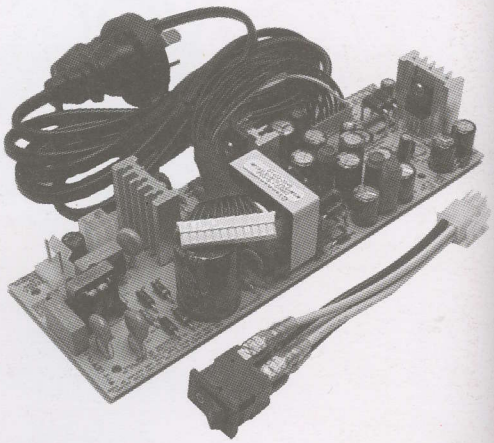

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